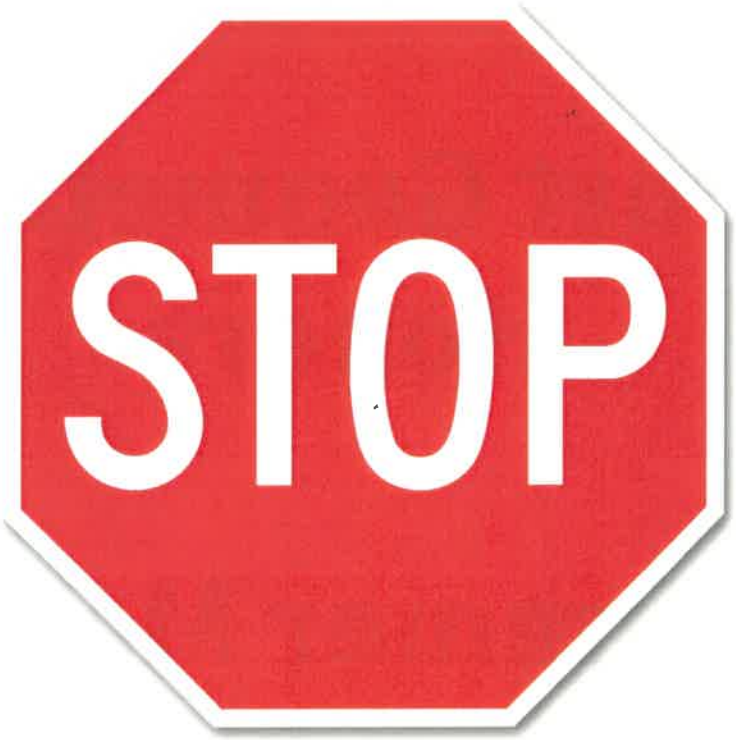
Post Geometry Honors

Summer Math Homework

Name: _____



Please do not begin this packet until you have read the instructions! The instructions can be found in a separate link on the CSN website. Most importantly, please make sure you have read and understood what you will be turning in to your teacher and how you will be graded. ALL TEACHERS REQUIRE WORK TO BE SHOWN FOR ALL PROBLEMS. If you have questions about the Summer Math Homework, please contact your teacher or Ms. Cankar.

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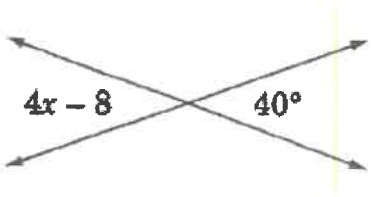
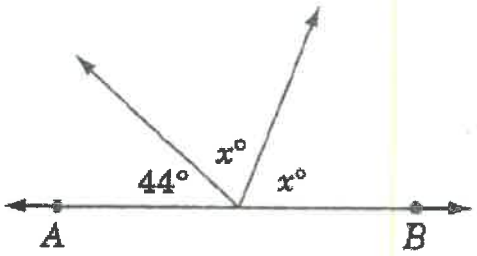
bcankar@communityschoolnaples.org

Practice A



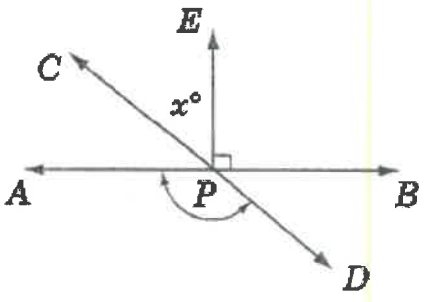
1. In the figure above, what is the value of x?

(a) 8 (b) 8.5 (c) 10 (d) 10.5 (e) 12



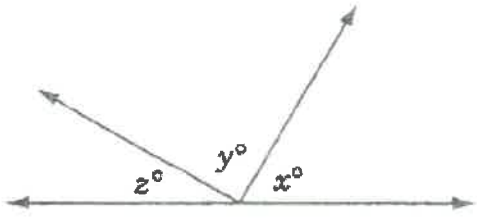
2. In the figure above AB is a straight line. What is the value of x?

(a) 22 (b) 20 (c) 68 (d) 78 (e) 88



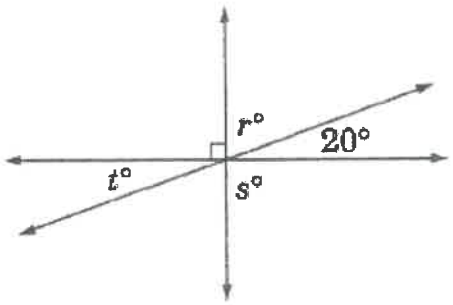
3. In the figure above, the measure of $\angle APD$ is 140^0. What is the value of x?

(a)40 (b) 45 (c) 50 (d) 55 (e) 60



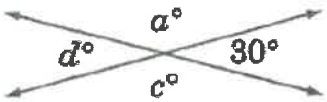
4. In the figure above $\angle x + \angle z = \angle y$. What is the value of y?

(a)30 (b) 45 (c) 60 (d) 75 (e) 90



5. In the figure above, what is the sum of r, s, and t?

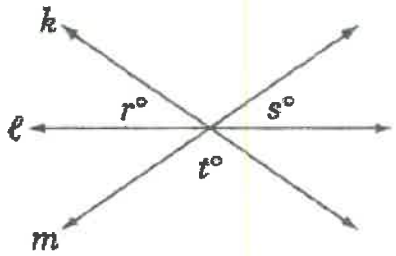
(a) 120 (b) 130 (c) 140 (d) 180 (e) 190



6. For the two intersecting lines above, which of the following expressions must be true?

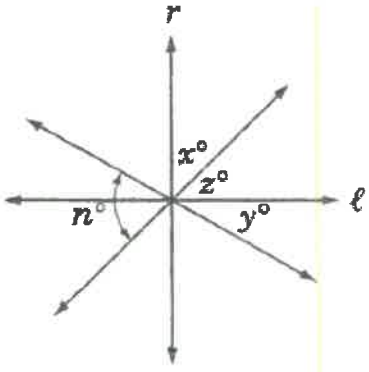
I. $a = c$ II. $a = 2d$ III. $a - d = c$

(a) *I Only* (b) II Only (c) *I and II Only* (d) *I and III Only* (e) *I, II and III*



7. Lines k, l *and* m intersect as shown above. What is the value of t in terms of r and s?

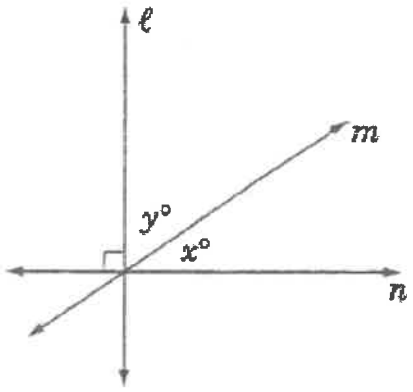
(a) r (b) s (c) $r + s$ (d) $180 - (r - s)$ (e) $180 - (r + s)$



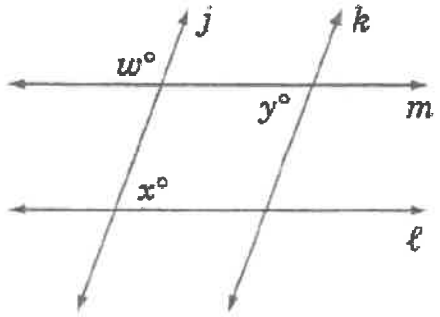
8. In the figure above $l \perp r$ and n = 75^0. What is the value of x – y?

(a) 15 (b) 20 (c) 30 (d) 45 (e) 60

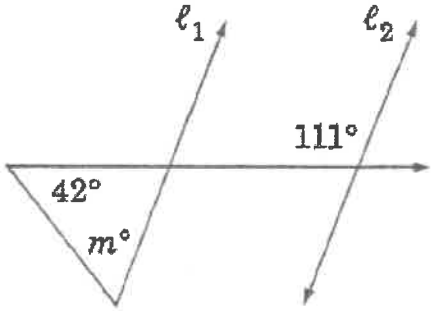
9. Four lines intersect at one point, forming eight angles. What is the average measure of each angle?
(a) 22.5 (b) 30 (c) 40.5 (d) 45 (e) 60



10. In the figure above, $l \perp n$ *and* x *is* 20^0 *less than* y. What is the value of x?
(a) 35 (b) 45 (c) 55 (d) 80 (e) 100

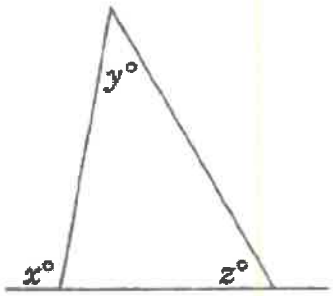


11. In the figure above, $j \parallel k$ *and* $l \parallel m$. If x + y = 140, what is the value of w?
(a) 20 (b) 40 (c) 70 (d) 110 (e) 140

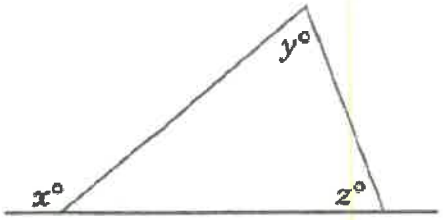


12. In the figure above, $l_1 \parallel l_2$. What is the value of m?
(a)42 (b) 59 (c) 69 (d) 79 (e) 82

Practice B



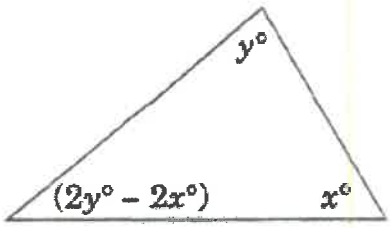
1. In the figure above, if y = 40, and z = 60, what is the value of x?
   (a) 260 (b) 100 (c) 80 (d) 60 (e) 40



2. In the figure above, if x = 2z and y = 70, what is the value of z?
   (a) 35 (b) 60 (c) 70 (d) 80 (e) 110

3. If $x^0, y^0, and\ z^0$ are measures of the angles of a triangle, then...
   $\frac{x-1}{2}+\frac{y}{2}+\frac{z+1}{2}=$

   $(a)90$ (b) 180 (c) 270 (d) 360 (e) 720

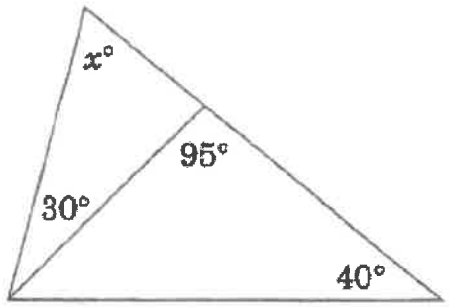


4. In the figure above, if y = 80, what is the value of x?
   $(a)10$ (b) 20 (c) 30 (d) 45 (e) 60

5. If the ratio of the angles of a triangle is 4 : 5 : 9, what is the degree measure of the smallest angle?
   $(a)5$ (b) 20 (c) 25 (d) 40 (e) 90

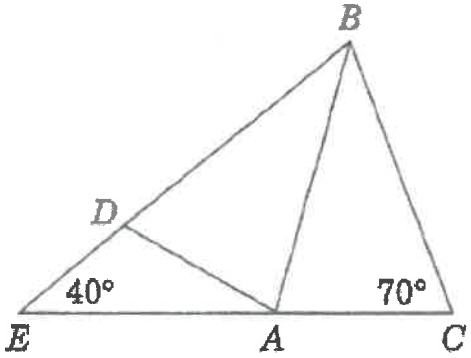
6. In an isosceles triangle, of the ratio of the vertex angle to the base angle is 1: 4, what is the degree measure the base angle?

(a)20 (b) 30 (c) 36 (d) 40 (e) 80



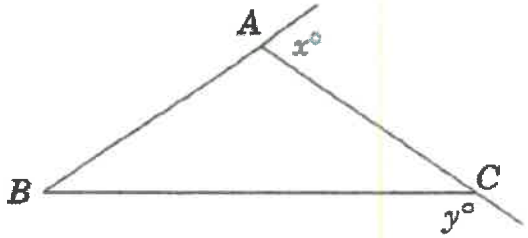
7. In ΔABC above, x =

(a)60 (b) 65 (c) 70 (d) 75 (e) 80



8. In the figure above, if ΔABC is the same size and shape as ΔABD, then the degree measure of $\angle BAD =$

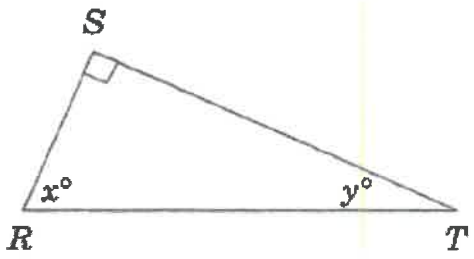
(a)25 (b) 35 (c) 45 (d) 50 (e) 75



Note: Figure not drawn to scale.

9. In the figure above, if sides AB = AC, and y = 145^0, what is the degree measure of $\angle x$?

(a)35 (b) 55 (c) 70 (d) 110 (e) 145



10. In the figure above, if x – y = 42 then what is the value of x?
    $(a)24$ (b) 26 (c) 42 (d) 48 (e) 66

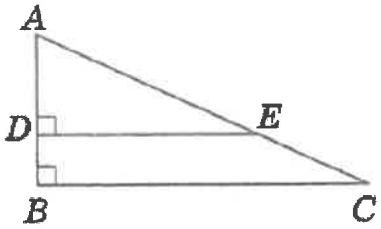
11. If the unequal sides of a triangle are integers, and in size order are 5, x, and 15, what is the largest possible value if x?
    $(a)10$ (b) 11 (c) 12 (d) 13 (e) 14

12. If the unequal sides of a triangle, in size order, are 6, x, and 14, how many integer values for x are possible?
    $(a)4$ (b) 5 (c) 6 (d) 10 (e) 11

13. The base of a triangle is 11. The other two sides are integers and one of the sides is twice as long as the other. What is the shortest possible length of a side of the triangle?
    $(a)1$ (b) 2 (c) 3 (d) 4 (e) 8

14. The base of a triangle is 17. The other two sides are integers and one of the sides is twice as long as the other. What is the longest possible length of a side of the triangle?
    $(a)17$ (b) 32 (c) 33 (d) 35 (e) $Any\ length$

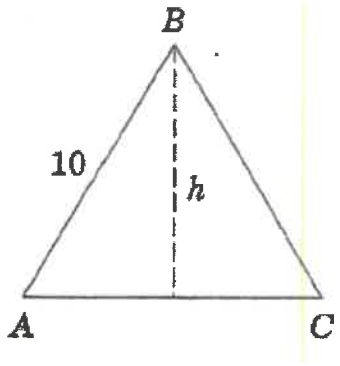
15. In ΔABC, the measure of $\angle A\ is\ 80^0$ and the measure of $\angle B\ is\ 50^0$. If the length of AB is 2x – 12 and the length of AC is x – 3, what is the length of AB?
    $(a)15$ (b) 12 (c) 9 (d) 6 (e) 3



16. In the right triangle ABC above, segment DE is drawn from side AB to AC as shown, forming a right triangle ADE. If BC is 24, AB is 12, and BD is 2, what is the length of DE?
    $(a)18$ (b) 16 (c) 15 (d) 12 (e) 8

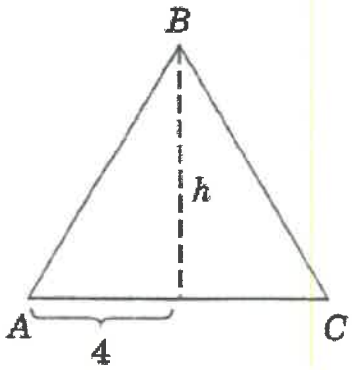
17. If the equal sides of an isosceles triangle are represented by 3N + 5 and 2N + 7, and the base is 4N – 0.5, what is the length of the base?
    $(a)2$ (b) 7.5 (c) 11 (d) 12 (e) 47.5

Practice C



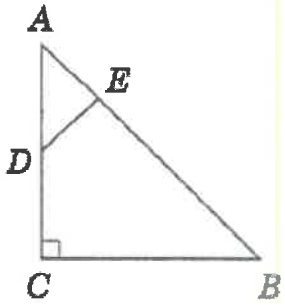
1. If ΔABC in the figure above is equilateral, what is the value of altitude h?

   $(a)\frac{5\sqrt{2}}{2}$ (b) $\frac{5\sqrt{3}}{2}$ (c) $5\sqrt{2}$ (d) $5\sqrt{3}$ (e) $10\sqrt{3}$



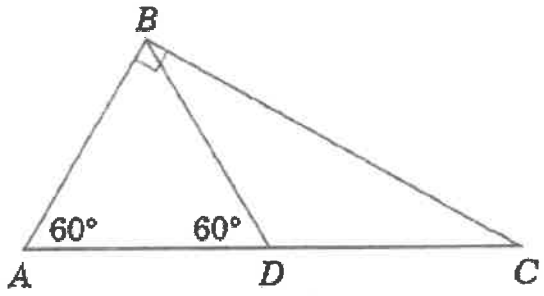
2. If ΔABC in the figure above is equilateral, what is the value of altitude h?

   $(a)8\sqrt{3}$ (b) $4\sqrt{3}$ (c) $4\sqrt{2}$ (d) $2\sqrt{3}$ (e) 2



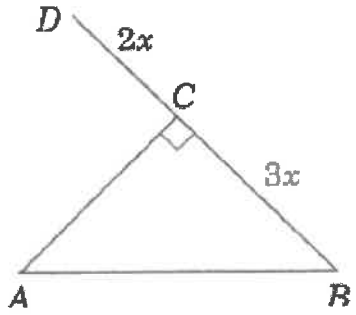
3. In the figure above, ΔABC is a right isosceles triangle with $DE \perp AB$. If AD = 2, what is the length of AE?

(a) $\sqrt{2}$ (b) $\sqrt{3}$ (c) 2 (d) $2\sqrt{2}$ (e) $2\sqrt{3}$



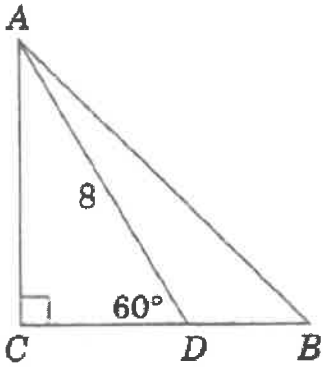
4. In right ΔABC above, the length of leg AB is $\sqrt{3}$ and D is the midpoint of AC. Find the length of BC?

(a) $\sqrt{3}$ (b) $\sqrt{6}$ (c) 3 (d) $2\sqrt{3}$ (e) 6



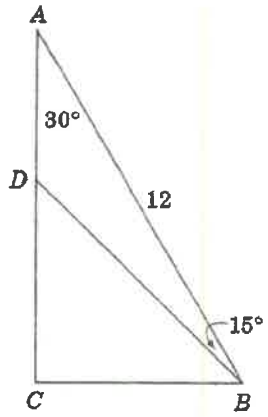
5. In isosceles right ΔABC shown in the figure above, leg AC = 6. What is the length BD?

(a) 2 (b) 6 (c) 9 (d) 10 (e) 15



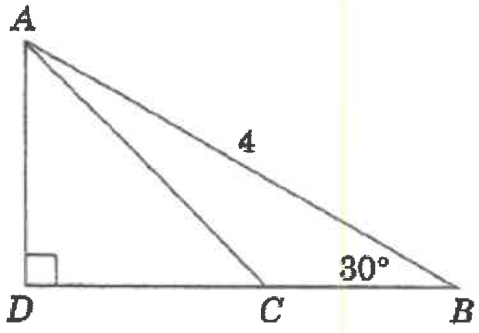
6. In the figure above, if ΔABC is an isosceles right triangle, what is the length of DB?

(a) $4\sqrt{3}-4$ (b) 4 (c) $4\sqrt{3}$ (d) $8\sqrt{3}-8$ (e) $8\sqrt{3}$



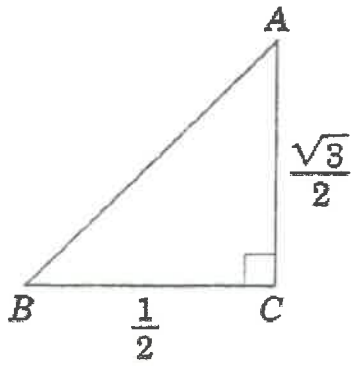
7. In right ΔABC above, if $\angle ABD = 15^0$ *and* $\angle A = 30^0$, what is the length of DB?

(a) 6 (b) $6\sqrt{3}$ (c) $6\sqrt{2}$ (d) $6\sqrt{3}-6$ (e) $6\sqrt{2}-6$



8. In the figure above, ΔADC is an isosceles right triangle. What is the length of side AC?

(a) 1 (b) $\sqrt{2}$ (c) $\sqrt{3}$ (d) $2\sqrt{2}$ (e) $2\sqrt{6}$



Note: Figure not drawn to scale.

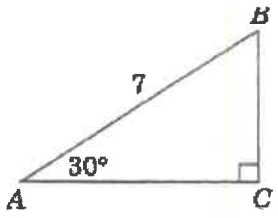
9. In the figure above, the measure of AB is...

(a) 1 (b) $\frac{\sqrt{6}}{2}$ (c) $\frac{\sqrt{3}+1}{2}$ (d) $\sqrt{2}$ (e) $\sqrt{3}$

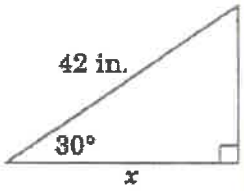
10. If the length of the hypotenuse of a $45^0 - 45^0 - 90^0$ right triangle is $3\sqrt{2}$, what is the area of the triangle?

(a) $\frac{3\sqrt{2}}{2}$ (b) $3\sqrt{2}$ (c) 4.5 (d) $4.5\sqrt{2}$ (e) 9

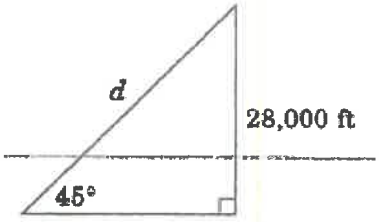
Practice D – Free Response



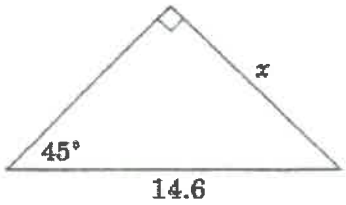
1. In the triangle ABC $\angle A = 30^0$ and the hypotenuse is 7 feet. What is the value of side BC to the nearest tenth?



2. In the figure given, what is the value of side x to the nearest tenth?



3. The triangle above illustrates the flight of a fighter jet that takes off at an angle of 45^0 with the ground. When the altitude of the plane is 28,000 feet, what is the distance d in miles (to the nearest tenth), that the plane has flown (5280 feet = 1 mile).



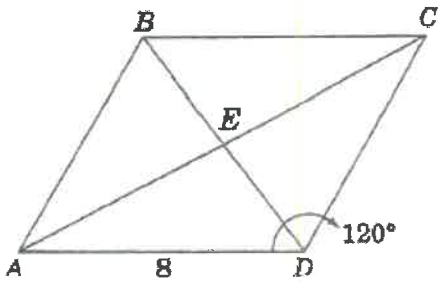
4. In the figure given, what is the value of side x to the nearest tenth?

5. In ΔABC, $\angle C$ is a right angle. If $\sin \angle A = \frac{3}{4}$, what is $\tan \angle B$ to the nearest thousandth?

6. In ΔDFG, $\angle G$ is a right angle and $\tan \angle D = \frac{5}{7}$. What is the $\cos \angle F$ to the nearest thousandth?

7. In ΔRST, $\angle T$ is a right angle and $\cos \angle R = \frac{4}{9}$. What is the $\cos \angle S$ to the nearest thousandth?

8. If the length of the altitude of equilateral ΔABC *is* $12\sqrt{3}$, what is the perimeter of the triangle?



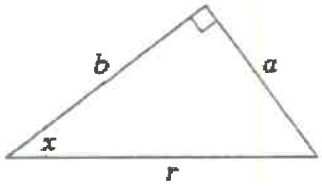
9. In the given figure, rhombus ABCD, $\angle ADC = 120^0$. AD = 8, and the diagonals intersect at E. What is the length of segment ED?

10. In triangle ABC, $\angle A = 30^0$, $\angle B = 60^0$, and BC = 4. What is the length of AC to the nearest hundredth?

Multiple Choice...

11. If the length of an altitude of an equilateral triangle is $5\sqrt{3}$, then the length of a side is...

(a) 4 (b) 5 (c) $5\sqrt{3}$ (d) 10 (e) $10\sqrt{3}$

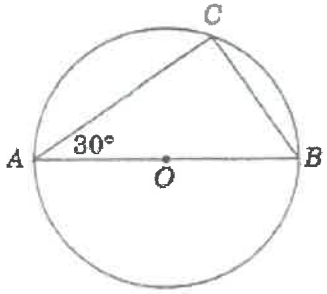


12. In the right triangle above, a, b, and r are the lengths of the sides. What is the value of x?

(a) $\frac{b}{a}$ (b) $\frac{a}{r}$ (c) $\frac{b}{r}$ (d) $\frac{r}{a}$ (e) $\frac{r}{b}$

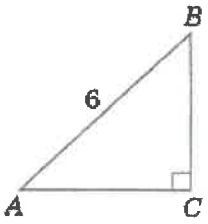
13. When measured from a point on the ground that is 50 feet from the base of a lamppost, the angle of elevation – the angle looking up to the lamppost – is 48^0. Which of the following equations represents the height of the lamppost?

(a) $50\cos 48^0$ (b) $50\sin 48^0$ (c) $50\cos 42^0$ (d) $50\tan 48^0$ (e) $50\cos 42^0$



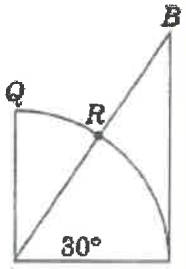
14. Triangle ABC is inscribed in circle O so that side AB of the triangle is the diameter of the circle and $\angle CAB$ is 30^0. If the radius of the circle is 4, what is the measure of $\angle COB$?

(a) 30^0 (b) 45^0 (c) 60^0 (d) 90^0 (e) 120^0



15. In the figure above, ΔABC is a right triangle. If the sin of $\angle A = \frac{1}{2}$ and the length of side AB = 6, what is the length of side AC?

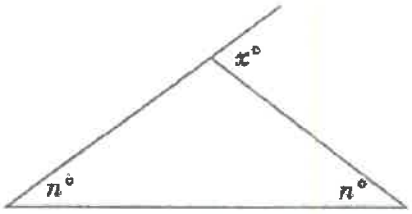
(a) $\frac{3\sqrt{2}}{2}$ (b) $\frac{3\sqrt{3}}{2}$ (c) 3 (d) $3\sqrt{2}$ (e) $3\sqrt{3}$



Note: Figure not drawn to scale

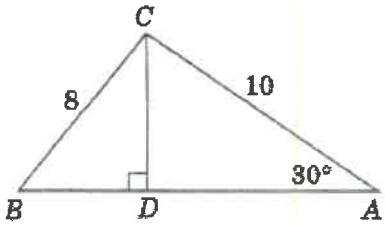
16. In the figure above, arc QRC is a quarter of a circle with a center at A. If AB is 8 and the measure of $\angle BAC = 30^0$, then to the nearest tenth, segment AR =

(a) 4 (b) 5.6 (c) 6 (d) 6.9 (e) 7



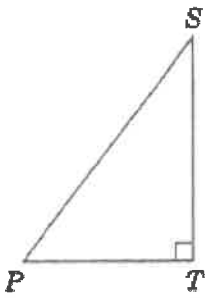
17. In the figure above, if $\sin n^o + \sin n^0 = 1$, *then* $x^0 =$

(a) 90 (b) 60 (c) 45 (d) 30 (e) 15



18. In the figure above, $\sin B - \sin A =$

(a) $\frac{1}{8}$ (b) $\frac{1}{2}$ (c) $\frac{5}{8}$ (d) $\frac{2}{3}$ (e) $\frac{4}{5}$



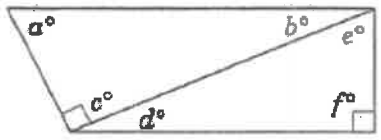
19. In the figure above, if tan P = $\frac{\sqrt{3}}{2}$, then cos P =

(a) $\frac{3}{\sqrt{7}}$ (b) $\frac{2}{\sqrt{7}}$ (c) $\frac{2}{\sqrt{13}}$ (d) $\frac{3}{\sqrt{13}}$ (e) $\frac{1}{2}$

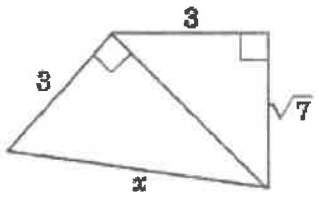
20. In right triangle ABC, where $\angle B = 90^0$ *and* $\angle C = 45^0$, if AC = 20, then the area of the triangle is...

(a) 50 (b) $50\sqrt{2}$ (c) 100 (d) $100\sqrt{2}$ (e) $100\sqrt{3}$

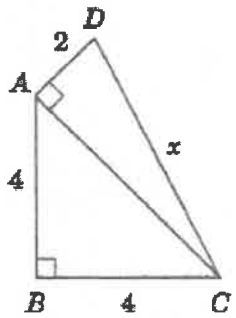
Practice E



1. In the figure above, what is the value of (c + f) – 2 (a + b + d + e)?
   (a) -180^0 (b) -90^0 (c) -0^0 (d) 90^0 (e) 180^0

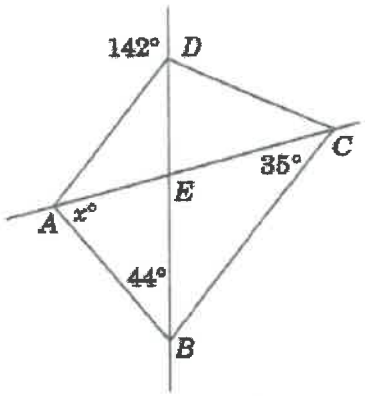


2. In the figure above, what is the value of x?
   (a) $\sqrt{7}$ (b) $\sqrt{19}$ (c) 5 (d) 7 (e) 10



3. In the figure above, what is the value of x?
   (a) 4 (b) $4\sqrt{2}$ (c) 5 (d) 6 (e) $6\sqrt{2}$

4. A square that measures 5 inches on a side is folded in half along a diagonal. Which of the following must be true?
   I. The triangle is a right triangle II. The triangle is an isosceles triangle III. The length of the hypotenuse of the triangle is 5
   (a) *I Only* (b) II Only (c) *III Only* (d) *I and II Only* (e) *I, II and III*

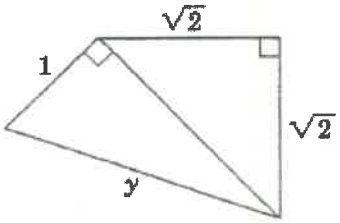


5. In the figure above $AD \parallel BC$. What is the value of x?

(a) 43 (b) 53 (c) 63 (d) 73 (e) 98

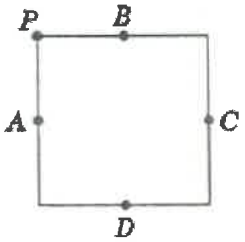
6. The number of diagonals d in a polygon with n sides is given by the formula $d = \frac{n^2-3n}{2}$. If a polygon has 90 diagonals, how may sides does it have?

(a) 12 (b) 15 (c) 18 (d) 24 (e) 30



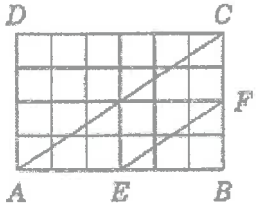
7. In the figure above, what is the value of y?

(a) 5 (b) $\sqrt{5}$ (c) 2 (d) $\sqrt{3}$ (e) 1



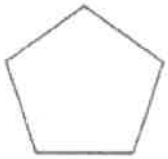
8. In the figure above, points A, B, C, and D are the midpoints of the sides of the square. If the length of one side is 4, what is the sum of the lengths of PA, PB, PC, and PD?

(a) $2\sqrt{2}$ (b) 4 (c) $2 + \sqrt{5}$ (d) $4 + 4\sqrt{5}$ (e) $8\sqrt{2}$



9. If the rectangle ABCD is divided into 24 equal squares, and diagonal $AC \parallel EF$, what is the ratio of AC to EF?

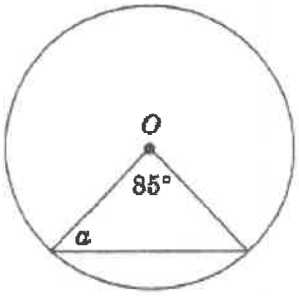
(a) 1:3 (b) 1:2 (c) 2:1 (d) 3:1 (e) 6:1



10. In the figure above, if the sides of the regular pentagon are extended through the vertices, then the plane will be divided into how many overlapping regions?

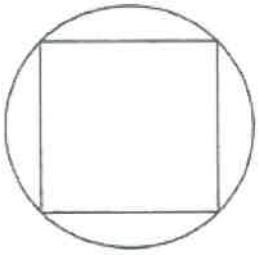
(a) 6 (b) 1 (c13 (d) 15 (e) 16

Practice F



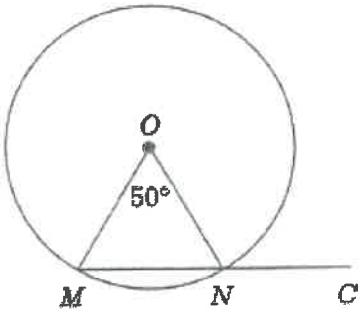
1. In circle O above, what is the value of a?

   (a) 10 (b) $47\frac{1}{2}$ (c) $62\frac{1}{2}$ (d) 85 (e) 95



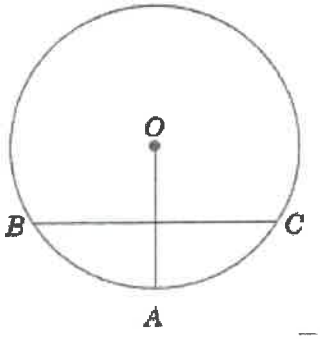
2. If the radius of the circle above is 5, what is the length of the side of the square?

   (a) 5 (b) $5\sqrt{2}$ (c) $5\sqrt{3}$ (d) 10 (e) 5



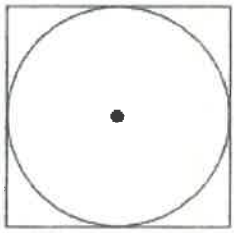
3. In the figure above, what is the value of $\angle ONC$?

   (a) 50 (b) 65 (c) 100 (d) 115 (e) 130



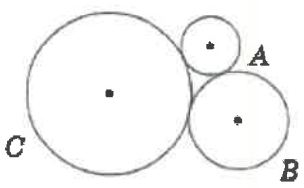
4. In the figure above, chord BC bisects OA, and $BC \perp OA$. If the radius of the circle O is 12, what is the length of the chord BC?

   (a) $3\sqrt{3}$ (b) 63 (c) $8\sqrt{3}$ (d) $12\sqrt{3}$ (e) 27



5. In the figure above, a circle is inscribed in a square. If the radius of the circle is $\frac{\pi}{2}$, then what is the diagonal of the square?

   (a) π (b) $\pi\sqrt{2}$ (c) $\frac{3}{2}$ (d) $\pi\sqrt{3}$ (e) 2π

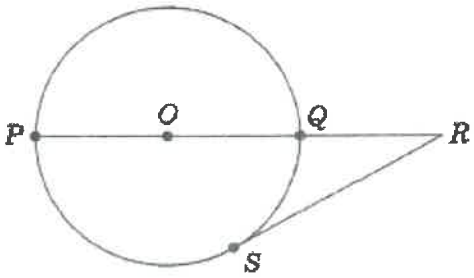


6. In the figure above, circles A, B, and C have radii 3, 5, and 7 respectively. What is the length of the perimeter of the triangle formed by joining the centers of the circles?

   (a) 15 (b) 21 (c) 15 π (d) 30 (e) 105

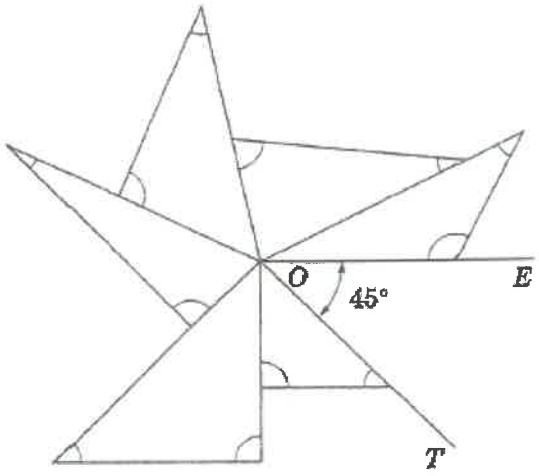
7. How many degrees are there in an angle formed by the hands of a clock at 1:30?

   (a) $97\frac{1}{2}$ (b) 120 (c) 135 (d) 150 (e) 175



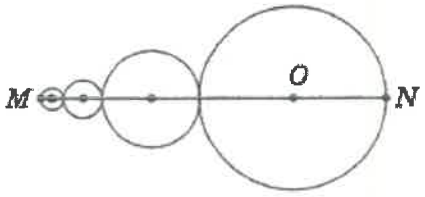
8. In the figure above, RS is tangent to circle O. If PO is 5 and QR is 8, what is the value of RS?

   (a) 5 (b) $\sqrt{39}$ (c) 8 (d) 12 (e) 144



9. In the figure above, $\angle TOE = 45^0$ and point O is a common vertex of the six triangles. What is the sum of the measures of the marked angles in the triangles?

   $(a)\ 225^0$ (b) 765^0 (c) 810^0 (d) $1{,}035^0$ (e) $1{,}080^0$



10. Segment MN passes through the centers of each tangent circle in the figure above. The radius of each circle is twice the radius of the circle to its left. What is $\frac{ON}{MN}$?

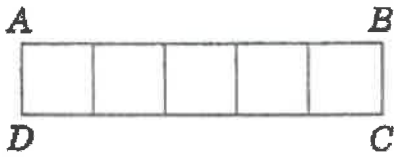
    $(a)\ \frac{1}{10}$ (b) $\frac{1}{8}$ (c) $\frac{1}{5}$ (d) $\frac{4}{15}$ (e) $\frac{2}{5}$

Practice G

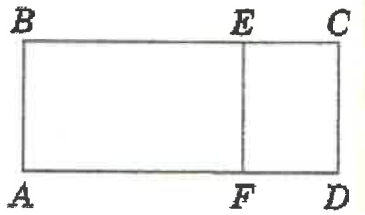
1. The length of a rectangular landing strip exceeds its with by 3,700 feet. If its perimeter is 17,400 feet, what is the length, in feet, of the airfield?
   (a) 2,500 (b) 5,000 (c) 6,200 (d) 10,000 (e) 13,700

2. If the lengths of two sides of the triangle are 12 and 15, which of the following must be true of p, the perimeter of the triangle?
   (a) $3 < p < 27$ (b) $12 < p < 42$ (c) $12 < p < 54$ (d) $30 < p < 54$ (e) $3 < p < 54$

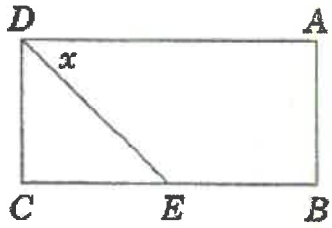
3. A square picture frame has an outer perimeter of 28 and an inner perimeter of 20. What is the shortest distance between any two vertices?
   (a) 5 (b) $\sqrt{2}$ (c) $2\sqrt{2}$ (d) 7 (e) $7\sqrt{2}$



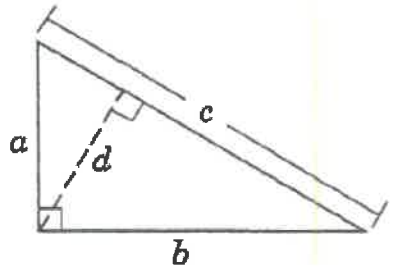
4. In the figure above, 5 equal squares are placed side by side to form rectangle ABCD. If the perimeter of the rectangle is 360 centimeters, then, in square centimeters, what is the area of one of the squares?
   (a) 25 (b) 72 (c) 324 (d) 900 (e) 5,184



5. In the figure above, the rectangle ABCD has a length of 12 and a width of 5. If $EF \parallel CD$, and the area of rectangle ECDF is $\frac{1}{4}$ the area of rectangle ABCD, what is the length of FD?
   (a) $\frac{12}{5}$ (b) $\frac{13}{5}$ (c) 3 (d) 5 (e) 15



6. In the figure above, E is the midpoint of side CB f rectangle ABD, and $\angle x = 45^0$. If AB is 3 centimeters, what is the area of rectangle ABCD, in square centimeters?
   (a) 27 (b) 18 (c) 9 (d) $4\frac{1}{2}$ (e) 3



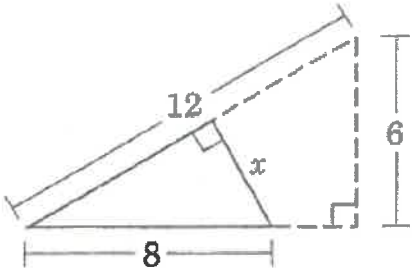
7. Which of the following expressions can be sued to find the area of the triangle in the figure above?

I. $\frac{bd}{2}$ II. $\frac{ab}{2}$ III. $\frac{dc}{2}$

(a) *I Only* (b) II Only (c) *III Only* (d) *I and II Only* (e) *II and III Only*

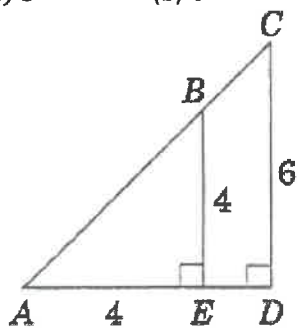
8. If each of the equal side of an isosceles triangle is 10, and the base is 16, what is the area of the triangle?

(a) 39 (b) 48 (c) 80 (d) 96 (e) 160



9. In the figure above, what is the value of x?

(a) 3 (b) 4 (c) 6 (d) 8 (e) 9



10. In the figure above, if AE = BE = 4, and CD = 6, what is the ratio of the area of ΔACD to the area of ΔABE?

(a) $\frac{9}{4}$ (b) $\frac{2}{1}$ (c) $\frac{3}{2}$ (d) $\frac{2}{3}$ (e) $\frac{4}{9}$

11. If two sides of a triangle are 8 and 15, and the included angle is 30^0, what is the area of the triangle?

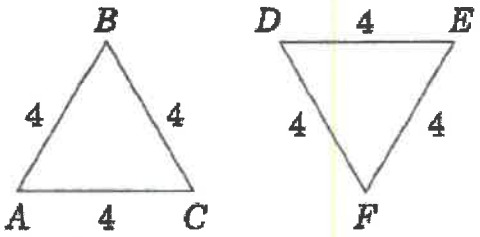
(a) 30 (b) 31 (c) $30\sqrt{3}$ (d) 60 (e) $60\sqrt{3}$

12. If two sides of a triangle are 12 and 17, and the included angle is 60^0, what is the area of the triangle?

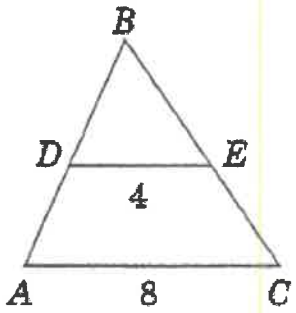
(a) 51 (b) $51\sqrt{2}$ (c) $51\sqrt{3}$ (d) $102\sqrt{2}$ (e) $102\sqrt{3}$

13. If the area of a right triangle is 16, the length of the legs could be...

(a) 8 *and* 2 (b) 12 *and* 4 (c) 10 *and* 6 (d) 20 *and* 12 (e) 32 *and* 1



14. When ΔABC is fitted together with ΔDEF to form a parallelogram, what is the area of the parallelogram?
(a) $2\sqrt{3}$ (b) 4 (c) 8 (d) $8\sqrt{3}$ (e) 16



15. In the figure above, the area of trapezoid ADEC is how many times the area of ΔDBE?
(a) 2 (b) 3 (c) 4 (d) 8 (e) 16

16. For which pair of integers (l, w), representing the length and width of a rectangle, is the numerical value of the area equal to the numerical value of the perimeter?
(a) $(2,3)$ (b) $(3,3)$ (c) $(3,4)$ (d) $(3,6)$ (e) $(4,6)$

17. If the area of triangle A with sides 5, 12, and 13 equals the area of rectangle B with height 5, what is the perimeter of the rectangle?
(a) 11 (b) 17 (c) 22 (d) 34 (e) *Cannot be determine with information given*

18. The area of triangle T is 225 square inches. If the length of the altitude h is twice the length of the base it is drawn to, what is the value of h?
(a) 9 (b) 15 (c) 20 (d) 25 (e) 30

19. A diagonal drawn through square A is half as long as a diagonal drawn through square B. The area of square B is how many times the area of square A?

(a) $\frac{1}{4}$ (b) $\frac{1}{2}$ (c) 2 (d) 4 (e) 8

20. An 8-inch by 10-inch map is drawn to a scale of 1 inch = 50 miles. If the same map is to be enlarged so that now 2 inches = 25 miles, how many 8-inch by 10-inch pieces of blank paper will be taped together in order for all of this map to fit?
(a) $\frac{1}{2}$ (b) 2 (c) 4 (d) 8 (e) 16

Practice H

1. What is the area of a circle with circumference π?

   $(a)\frac{\pi}{4}$ (b) $\frac{\pi^2}{4}$ (c) $\frac{\pi}{2}$ (d) $\frac{\pi^2}{2}$ (e) π^2

2. What is the circumference of a circle with area π?

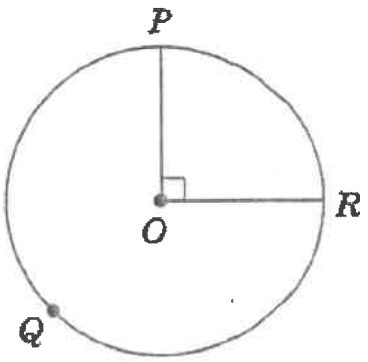
   $(a)\frac{\pi}{4}$ (b) $\frac{\pi}{2}$ (c) π (d) 2π (e) $\frac{\pi^2}{2}$

3. The circumference of a circle with a radius 6 is how many times the circumference of a circle with a radius of 2?

   $(a)\frac{1}{3}$ (b) 1 (c) 3 (d) π (e) 4

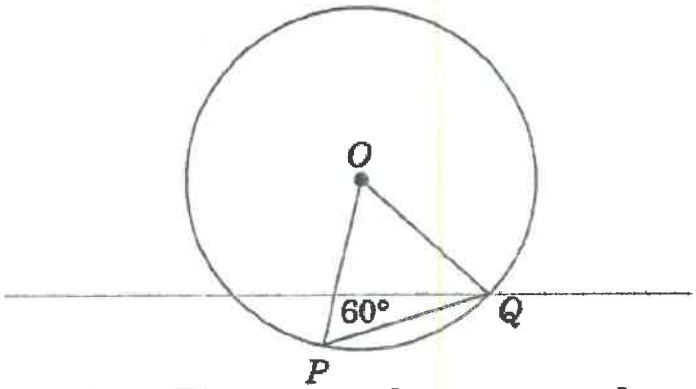
4. The area of a circle with a radius of 2 is how much less than the area of a circle with radius 4?

   $(a)2\pi$ (b) 4π (c) 8π (d) 12π (e) 16π



5. If the circle above has a diameter of 12, what is the length of Major $Arc\ PQR$?

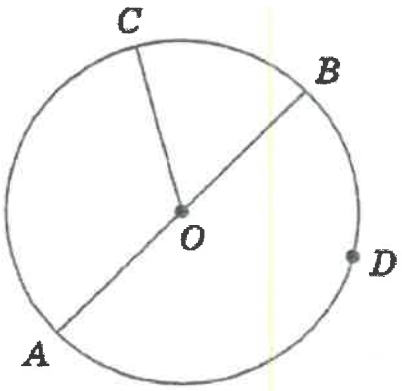
   $(a)1.5\pi$ (b) 3π (c) 6π (d) 9π (e) 12π



Note: Figure not drawn to scale.

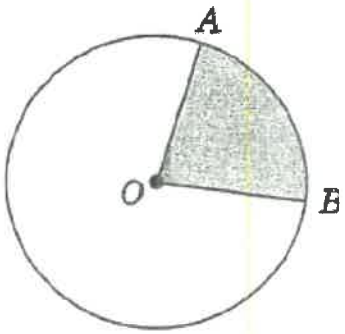
6. If the circle above has a diameter of 30, what is the length of minor arc PQ?

   $(a)2.5\pi$ (b) 5π (c) 7.5π (d) 10π (e) 15π



7. In the circle above, AB is the diameter and the length of major arc ADB is15π . If $\angle COB = 60^0$, what is the length of arc AC?

   $(a)3\pi$ (b) 5π (c) 9π (d) 10π (e) 12π

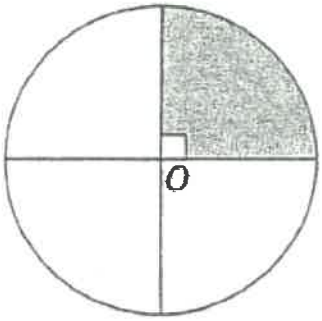


8. If $\angle AOB = 80^0$ in the figure above, what is the ratio of the shaded area to the unshaded area?

   $(a)1:4$ (b) 2: 9 (c) 4: 15 (d) 2:7 (e) 3: 14

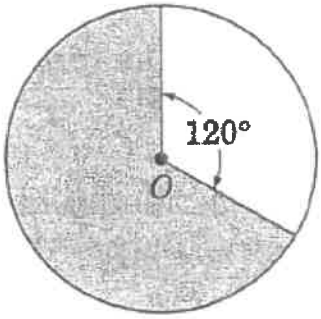
9. The area of a circle with a radius of 8 is how many times the area of a circle with a radius of 2?

   $(a)16$ (b) π (c) 8 (d) 4 (e) $\frac{1}{2}$



10. If the circumference of the circle above is 8π, what is the area of the shaded region?

    $(a)\pi$ (b) 2π (c) 4π (d) 8π (e) 16π



11. What is the perimeter of the shaded portion in the figure above, if the radius of the circle is 1 and the central angle is 120^0?

(a) $\frac{\pi}{3}+2$ (b) $\frac{2\pi}{3}$ (c) $\frac{2\pi}{3}+2$ (d) $\frac{4\pi}{3}+1$ (e) $\frac{4\pi}{3}+2$

12. If two semi-circles A and B have radii of 12 and 16, respectively, what is the ratio of their areas?

(a) $\frac{9}{32}$ (b) $\frac{3}{16}$ (c) $\frac{3}{8}$ (d) $\frac{9}{16}$ (e) $\frac{3}{4}$

Practice I

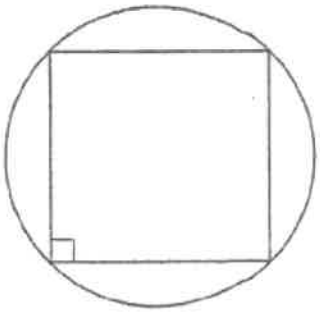
1. If a circle with a radius of 4 is equal in area to a square, what is the side of the square?
   (a) $2\sqrt{\pi}$ (b) $4\sqrt{\pi}$ (c) 2π (d) 4π (e) 16π

2. If a square with a diagonal of $4\sqrt{2}$ is equal to in area to a circle, that is the radius of the circle?
   (a) $\frac{2}{\pi}$ (b) $\frac{4}{\pi}$ (c) $\frac{2}{\sqrt{\pi}}$ (d) $\frac{4}{\sqrt{\pi}}$ (e) $2\sqrt{2}$

3. If a square with a side of 5 is inscribed in a circle, what is the circumference of the circle?
   (a) $5\pi\sqrt{2}$ (b) 10π (c) $10\pi\sqrt{2}$ (d) 25π (e) $25\pi\sqrt{2}$

4. If a square with a side of π is inscribed in a circle, what is the circumference of the circle?
   (a) 3π (b) 4π (c) $\pi^2\sqrt{2}$ (d) $2\pi^2$ (e) $4\pi^2$

Questions 5 and 6 refer to the following information.

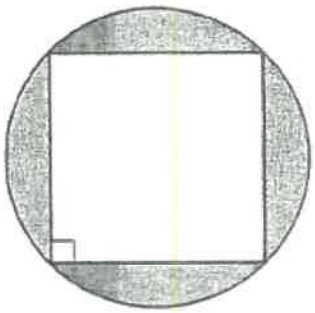


In the figure above, the square is inscribed in the circle. The area of the circle is 36π.

5. What is the length of a side of the square?
   (a) 6 (b) $6\sqrt{2}$ (c) 12 (d) $12\sqrt{2}$ (e) 36

6. What is the area of the inscribed square?
   (a) 18 (b) 36 (c) 54 (d) 72 (e) 90

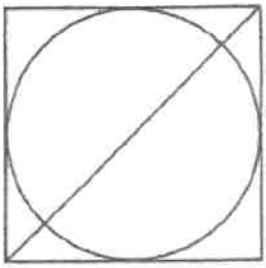
Questions 7 and 8 refer to the following information.



In the figure above, a square with a side of 6 is inscribed in a circle.

7. What is the area of the shaded region?
   $(a) 36 - 18\pi$ (b) $9\pi - 36$ (c) $36 - 9\pi$ (d) $18\pi - 36$ (e) $36\pi - 36$

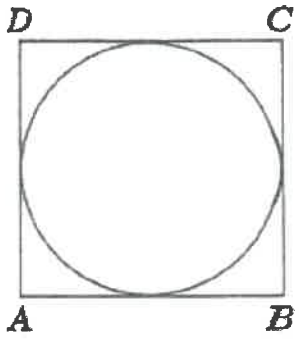
8. What is the ratio of the shaded region to the unshaded region?
   $(a) \frac{2}{2-\pi}$ (b) $\frac{2-\pi}{2}$ (c) $\frac{\pi-4}{4}$ (d) $\frac{\pi-2}{2}$ (e) $\frac{2}{\pi-2}$



9. In the figure above, a circle is inscribed in a square with a diagonal of 12. What is the area of the inscribed circle?
   $(a) 36\pi$ (b) 18π (c) 12π (d) $6\sqrt{2}\pi$ (e) 9π

10. In a circle with an area of 4π is inscribed in a square, what is the perimeter of the square?
    $(a) 4$ (b) 8 (c) 16 (d) 8π (e) 16π

Questions 11 and 12 refer to the following information.



The circle inscribed in the square *ABCD* above has an area of 16π.

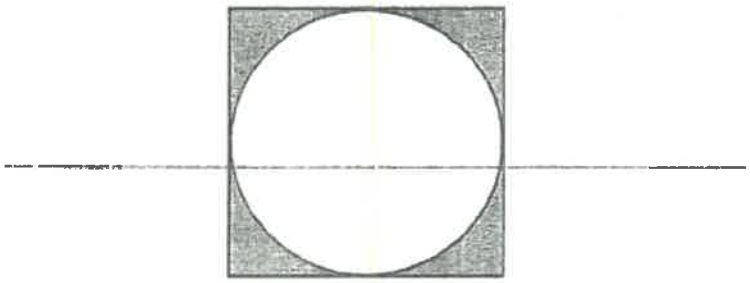
11. What is the length of diagonal AC?

(a) 4 (b) 8 (c) $8\sqrt{2}$ (d) 16 (e) $16\sqrt{2}$

12. To the nearest tenth, what is the positive difference between the diagonal of the square and the diameter of the circle?

(a) 1.4 (b) 3.3 (c) 3.4 (d) 4.7 (e) 11.3

Questions 13 and 14 refer to the following information.



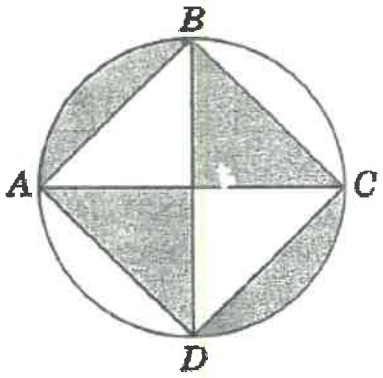
In the figure above, the circle inscribed in the square has a radius of 3.

13. What is the ratio of the perimeter of the square to the circumference of the circle?

(a) $\frac{\pi}{6}$ (b) $\frac{\pi}{4}$ (c) $\frac{8}{9}$ (d) $\frac{4}{\pi}$ (e) $\frac{6}{\pi}$

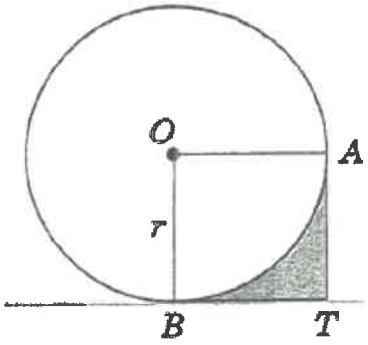
14. What is the area of the shaded region?

(a) $9\pi - 36$ (b) $24 - 9\pi$ (c) $24 - 6\pi$ (d) $36 - 9\pi$ (e) $36 - 6\pi$



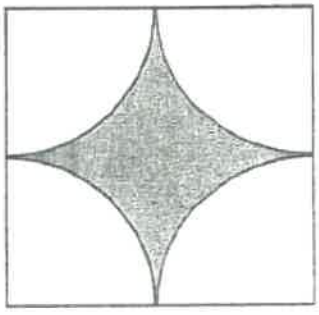
15. A square ABCD is inscribed in a circle of radius 8, as seen in the figure above. What is the area of the shaded region?

(a) 64π (b) 32π (c) 16π (d) 32 (e) $16\pi - 32$



16. In the figure above, r is the radius of the circle with center O and BOAT is a square with points B and A on the circle. In terms of r, what is the area of the shaded region?

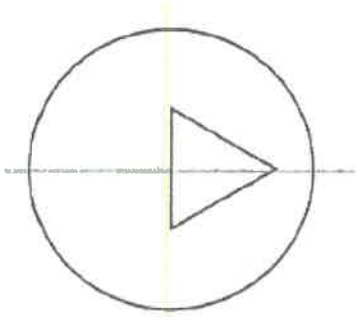
(a) $r^2(1-\frac{\pi}{4})$ (b) $r^2(1-\pi^2)$ (c) $r(r-\frac{\pi}{2})$ (d) $r(r-\pi)$ (e) $r^2(1-\pi)$



17. In the square above, each arc is from a circle of radius 1. What is the area of the shaded region?

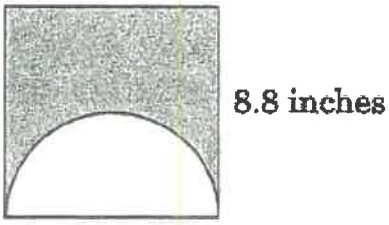
(a) $4-4\pi$ (b) $\pi-4$ (c) $4-\pi$ (d) π (e) $4\pi-4$

Practice J



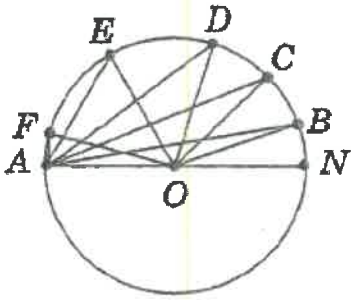
1. In the figure above, a triangle is drawn inside a circle. No part of the triangle touches the circle. If each side of the triangle is extended so that it intersects the circle, how many separate, non-overlapping regions are bounded by the circle?

   (a) *Three* (b) *Four* (c) *Five* (d) *Six* (e) *Seven*



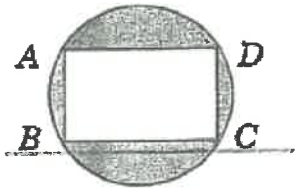
2. A semicircle is inscribed in a square in the figure above. If a side of the square is 8.8 inches, what is the area to the nearest integer, of the shaded region?

   (a) 17 (b) 30 (c) 47 (d) 61 (e) 77



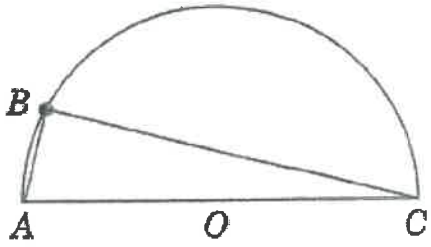
3. In circle O above, OA is the radius. Which of the following triangles has the greatest area?

   (a) ΔAOB (b) ΔAOC (c) ΔAOD (d) ΔAOE (e) ΔAOF



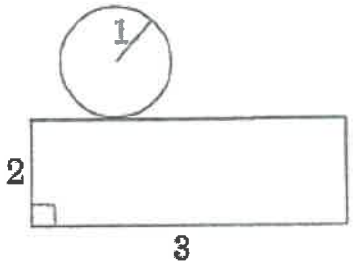
4. In the circle above, if the radius is 5 inches and the short side of the inscribed rectangle ABCD is 6 inches, what is the area of the shaded region?

(a) $10\pi - 60$ (b) $25\pi - 80$ (c) $25\pi - 60$ (d) $25\pi - 48$ (e) $25\pi - 25$



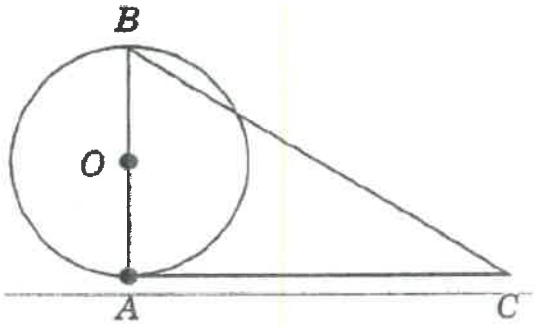
5. In the figure above ABC is a semicircle with center O. If AB = 1 and BC = 3, what is the area of the semicircle?

(a) $\frac{5\pi}{4}$ (b) $\frac{\pi\sqrt{10}}{2}$ (c) $\frac{5\pi}{2}$ (d) 5π (e) $\frac{25\pi}{2}$



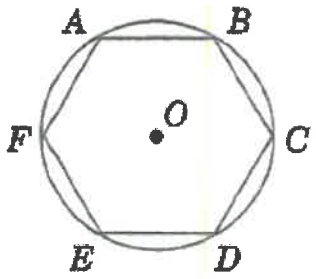
6. The length of the above rectangle is 3 and the width is 2. If a circle with a radius of 1 rolls once around the outside of that rectangle (without slipping), how far will the center of the circle travel?

(a) 10 (b) 4 (c) $10 + \pi$ (d) $10 + 2\pi$ (e) 18

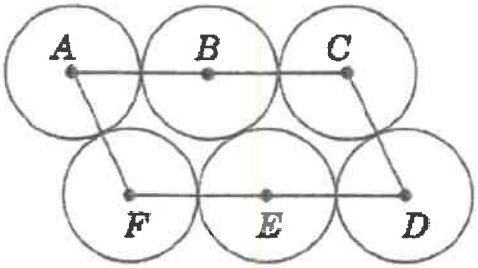


7. If AC is tangent to circle O at point A, which AC =5 and BC = 7, what is the area of the circle?

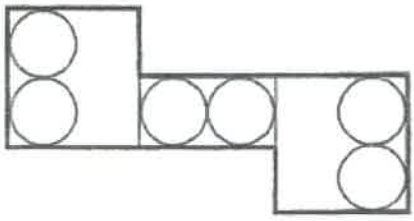
(a) $\pi\sqrt{6}$ (b) $\pi\sqrt{24}$ (c) 6π (d) 12π (e) 24π



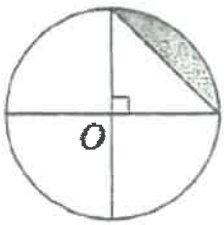
8. In the figure above, the sides of the polygon are all of equal length and O is the center of the circle. If the diameter of the circle is 12, what is the perimeter of the polygon?
   (a) 6 (b) 18 (c) 36 (d) 48 (e)72



9. In the figure above, each of the six circles has an area of 4π. What is the perimeter of the figure formed by connected their center points in alphabetical order from A to F and back to A?
   (a) 12 (b) 24 (c) 36 (d) 48 (e) 24π



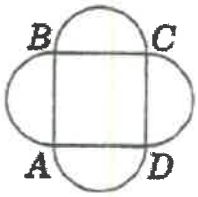
10. In the figure above, two large squares are linked by a rectangle and each pair of circles is tangent to each other and to the side of the squares or rectangle. If the sum of the circumferences of the six congruent circles is30π, what is the perimeter of the dark outlined figure?
    (a) 50 (b) 80 (c) 90 (d) 100 (e) 180π



11. In the figure above, O is the center of the circle and the radius is 4. What is the area of the shaded region?
    (a) $4\pi - 4$ (b) $4\pi - 8$ (c) $4\pi - 16$ (d) $16\pi - 8$ (e) $16\pi - 16$

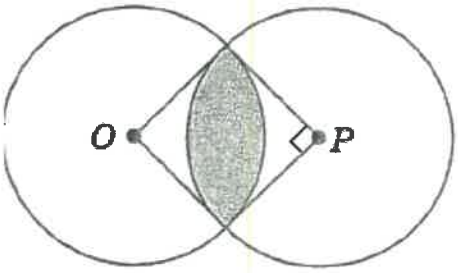
12. For her geometry project, Valerie has to cut out as many 2-inch diameter circles as she can from a rectangular sheet of paper 10 inches by 4 inches. To the nearest square inch, what is the least amount of paper she could have left?

(a) 0 (b) 2 (c) 8 (d) 9 (e) 10



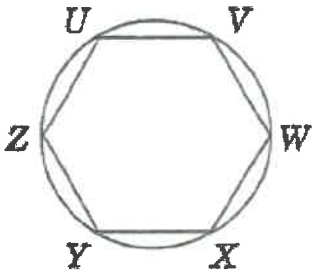
13. In the figure above, four semicircles are drawn on each side of the square ABCD. If the diagonal of the square is $8\sqrt{2}$, what is the perimeter of the figure?

(a) 8π (b) 12π (c) 16π (d) 24π (e) 32π



14. In the figure above, O and P are centers of circles, each with a radius of 6. What is the area of the shaded region?

(a) 9 (b) $9\pi - 9$ (c) $9\pi - 36$ (d) $18\pi - 36$ (e) 18



15. A regular hexagon is inscribed in circle O. The radius of the circle is 6. A string with length 16π is wrapped around the circle in a clockwise direction with one end at point U. At which point is the other end of the string?

(a) V (b) W (c) X (d) Y (e) Z

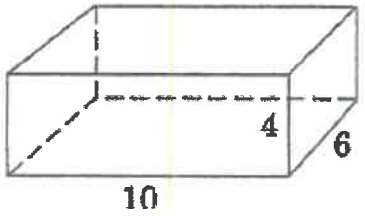
Practice K

1. If the area of one face of a cube is 16, what is the volume of the cube?
   (a) 4 (b) 12 (c) 48 (d) 64 (e) 256

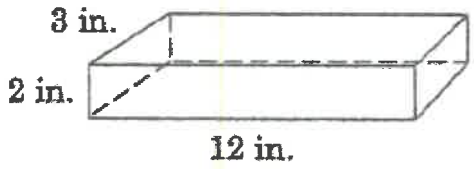
2. If the length of one edge of a cube is $2\sqrt{2}$, what is the volume of the cube?
   (a) $6\sqrt{2}$ (b) 8 (c) $8\sqrt{2}$ (d) 16 (e) $16\sqrt{2}$

3. Cube A has an edge of 4. If each edge of cube A is increased 25%, created a second cube B, then the volume of cube B is how much greater than the volume of cube A?
   (a) 16 (b) 45 (c) 61 (d) 64 (e) 80

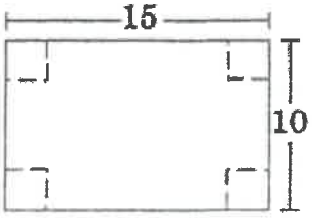
4. How many wooden toy cubes with a 3-inch edge can fit in a rectangular container with dimensions 3 inches by 21 inches by 15 inches?
   (a) 13 (b) 27 (c) 35 (d) 105 (e) 315



5. If we assume that there is no wasted ice, how many smaller rectangular block ice cubes, dimensions 2 X 3 X 4, can be cure from two large blokes of ice each the size shown above?
   (a) $26\frac{2}{3}$ (b) 20 (c) 10 (d) 5 (e) 4



6. A rectangular box, shown above, with dimensions 2 inches by 3 inches by 12 inches will be used to pack glass paperweights. If each paperweight is a cube with a volume of 8 cubic inches, what is the volume of space, in cubic inches, that will be left for the packing material?
   (a) 0 (b) 9 (c)12 (d) 24 (e) 48



7. A rectangular piece of tin 10 inches by 15 inches is to be made into a box by cutting out squares (each 2.5 inches on a side) from each corner as in the figure above. If the sides are then bent up to form the box, what will be the volume, in cubic inches, of this box?
   (a) 50 (b) 125 (c) $224\frac{3}{8}$ (d) 250 (e) 375

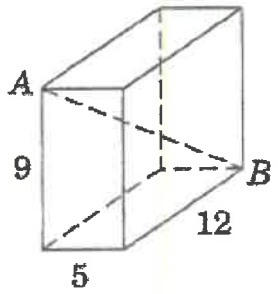
8. A rectangular solid has a square base. The volume is 360 cubic inches and the height is 10 inches. What is the perimeter of the base?
   (a) 24 (b) 36 (c) 40 (d) 60 (e) 100

9. A cereal box has a volume of 176 cubic inches. When it stands upright, its base has an area of 16 square inches. If a supermarket displays the box standing upright on a display shelf, what is the minimum number of inches between that shelf and the one above it?
   (a) 8 (b)11 (c) 16 (d) 160 (e) 256

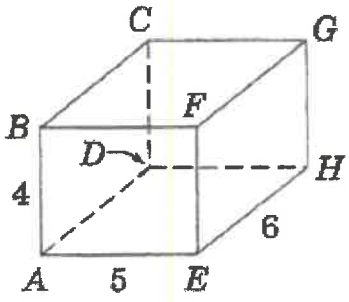
10. All the dimensions of a certain rectangular solid are integers greater than 1. If the volume is 126 cubic inches and the height is 6 inches, what is the perimeter of the base?
    (a) 10 (b)16 (c) 20 (d) 21 (e) 27

11. If cube B has an edge 3 times that of cube A the volume of cube B is how many time the volume of cube A?
    (a) 3 (b) 9 (c) 12 (d) 27 (e) 36

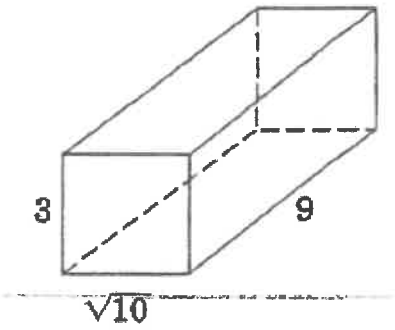
12. If the ratio of the edge of cube A to the edge of cube B is 3 to 2, what is the ratio of the surface area of A to the surface area of B?
    (a) $\frac{9}{8}$ (b) $\frac{3}{2}$ (c) $\frac{6}{4}$ (d) $\frac{9}{4}$ (e) $\frac{27}{8}$



13. What is the length of diagonal AB, in the figure above, if the edges are 5, 9, and 12?
    (a) 18 (b) $5\sqrt{10}$ (c) 15 (d) $9\sqrt{2}$ (e) 13

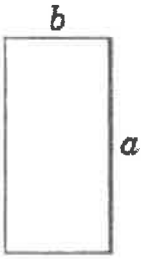


14. In the figure above, how many paths are there along the edges from point A to point G where the total length is 15?
    (a) *Two* (b) *Three* (c) *Four* (d) *Six* (e) *Eight*



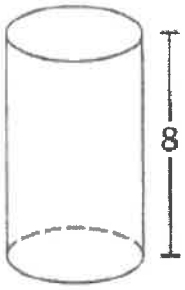
15. If a box has dimensions 3, $\sqrt{10}$, and 9, what is the length of the longest line segment that can be drawn joining two vertices?

(a) $\sqrt{19}$ (b) $\sqrt{90}$ (c) $\sqrt{91}$ (d) 10 (e) $\sqrt{101}$



16. When the rectangle show above revolves 360^0 about side a, the resulting cylinder has a volume in cubic units that can be written as...

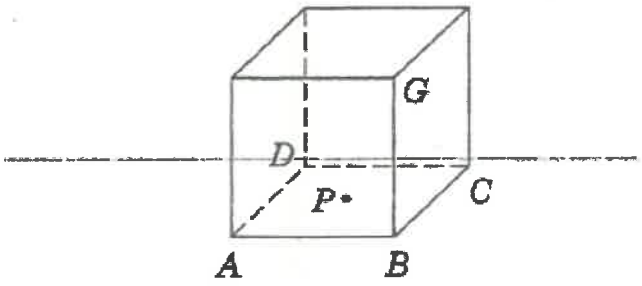
(a) πab^2 (b) $\pi a^2 b$ (c) $\pi a^2 b^2$ (d) $2\pi ab$ (e) $2\pi ab^2$



17. If the volume of a cylinder is 72π and the height is 8, what is the circumference of the base?

(a) 3π (b) 4π (c) 6π (d) 9π (e) 12π

Questions 18 and 19 refer to the following figure.

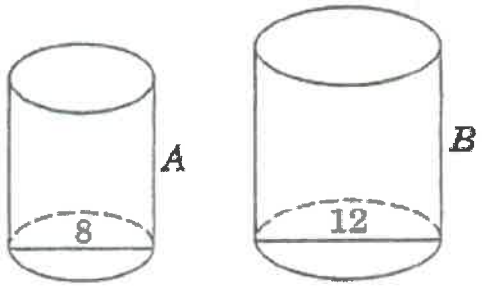


18. The figure above, the cube as an edge of length 6 and the point P is in the center of the bottom face ABCD. What is the distance from point B to point P?

(a) 3 (b) $3\sqrt{2}$ (c) 6 (d) $6\sqrt{2}$ (e) $6\sqrt{3}$

19. What is the area of the triangle formed by joining points G, B, and P?

(a) 9 (b) $9\sqrt{2}$ (c) $9\sqrt{3}$ (d) 18 (e) Cannot be determined from the information given



20. The two right circular cylinders A and B above have diameters of 8 and 12 respectively. If the volume of B is twice the volume of A, what is the ratio of the height of A to the height of B?

(a) $\frac{4}{9}$ (b) $\frac{1}{2}$ (c) $\frac{2}{3}$ (d) $\frac{8}{9}$ (e) $\frac{9}{8}$

Test 3 Section 1

1. If $a = \frac{3}{5}$, and is the value of $a - \frac{1}{3}a$?
   $(a)\ \frac{1}{5}$ (b) $\frac{2}{5}$ (c) $\frac{1}{2}$ (d) $\frac{3}{5}$ (e) 1

2. If the endpoint of a line segment AB is (-5, 2) and the midpoint is (2, -5), what is the other endpoint?
   $(a)(\frac{3}{2}, \frac{3}{2})$ (b) $(-1,-1)$ (c) $(0,0)$ (d) $(5,-8)$ (e) $(9,-12)$

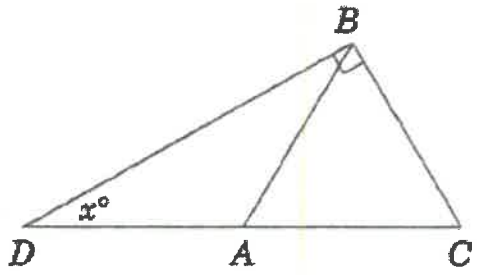
3. If $\frac{x}{7} + \frac{x}{7} + \frac{x}{7} = 9$, what is the value of x?
   (a) 3 (b) 7 (c) 21 (d) 63 (e) 189

4. If v, w, x, y, and z are consecutive odd integers, what is the value of $\frac{v+w+x+y+z}{x}$?
   (a) 0 (b) 2 (c) 3 (d) 5 (e) 10

5. If the length of one side of a regular polygon is 25% of its perimeter, then polygon has how many sides?
   (a) 3 (b) 4 (c) 5 (d) 8 (e) 25

6. If $a < 0 < b$, which of the following inequalities much be true?
   $(a)\ a^2 < b^2$ (b) $a^3 < b^3$ (c) $\frac{1}{a} > \frac{1}{b}$ (d) $\frac{1}{a^3} > \frac{1}{b^3}$ (e) $\frac{1}{a^4} > \frac{1}{b^4}$

7. If x – y = -5 and x + y = 11, what is the value of $x^2 - y^2$?
   $(a) - 96$ (b)-55 (c) -16 (d) 16 (e) 55

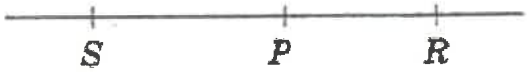


8. In the figure above, if ΔABC is equilateral and AD = AB what is the value of x?
   (a)30 (b)45 (c) 60 (d) 90 (e) 120

9. If $2^x = 16$, then $x^{8-x} =$_____
   (a)1 (b) 4 (c) 5 (d) 125 (e) 256

10. If set S consists of all odd multiples of 3, that is, S = (...,-9, -3, 3, 9,...). If the integers x and y are in S, which of the following must also be in S?
    $(a)xy$ (b) $x + y$ (c) $x - y$ (d) $x \div y$ (e) $-x - y$

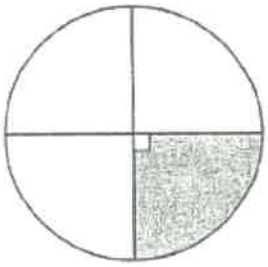
11. A square with a side of π is equal in area to a circle. What is the diameter of the circle?
    $(a)2\pi$ (b) $\frac{\pi}{2}$ (c) $2\sqrt{\pi}$ (d) $\sqrt{2\pi}$ (e)$\sqrt{\pi}$



Note: Figure not drawn to scale.

12. In the figure above, 3PR = PS. What is the value of $\frac{SR}{PS}$?

(a) $\frac{1}{3}$ (b) $\frac{1}{4}$ (c) $\frac{2}{3}$ (d) $\frac{3}{4}$ (e) $\frac{4}{3}$



13. If the shaded area in the figure above is 4π, what is the circumference of the circle?

(a) 4 (b) 8 (c) 4π (d) $4\pi^2$ (e) 8π

14. If the average of an integer N and its reciprocal is $\frac{5}{3}$, what is that integer?

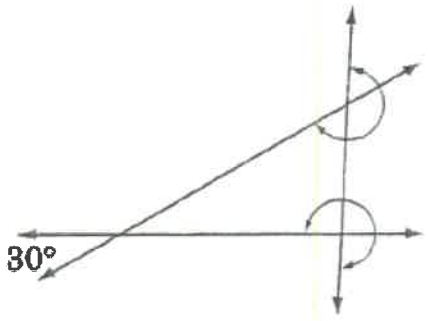
(a) $\frac{3}{5}$ (b) 3 (c) 5 (d) 6 (e) 7

15. If x books cost d dollars, how much will m books cost at the same rate?

(a) mxd (b) $\frac{xd}{m}$ (c) $\frac{md}{x}$ (d) $\frac{x}{md}$ (e) $\frac{mx}{d}$

16. If the surface area of a cube is $54e^2$, what is the volume of the cube?

(a) $3e$ (b) $9e^2$ (c) $9e^3$ (d) $27e^2$ (e) $27e^3$



17. In the figure above, three lines intersect. What is the sum of the degree measures of the marked angles?

(a) 510 (b) 590 (c) 720 (d) 1,050

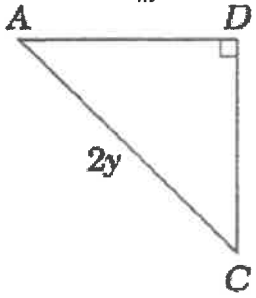
(e) *Cannot be deterined from the information given*

18. If the sum of 3 unequal positive integers equals 20, what is the largest possible value of the smallest number?

(a) 3 (b) 5 (c) 6 (d) 17 (e) 18

19. If $m^{10} = 20$ *and* $m^9 = \frac{5}{x}$, what is the value of x in terms of m?

(a) $\frac{1}{4}m$ (b) $1 - \frac{1}{m}$ (c) $4 - \frac{4}{m}$ (d) $2m$ (e) $4m$



Note: Figure not drawn to scale.

20. In the figure above, if AD is extended to the right to point B (not shown) so that D is the midpoint of ADB, and if the length of AB is 2y, what is the length of CD in terms of y?

(a) $y\sqrt{2}$ (b) $y\sqrt{3}$ (c) $y\sqrt{5}$ (d) $\frac{3}{2}y$ (e) $2y$

Test 3 Section 2

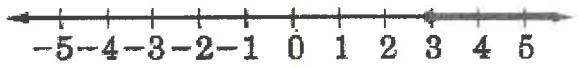
1. The value of $[7-2(3-2)^{-1}]^{-1}$ is

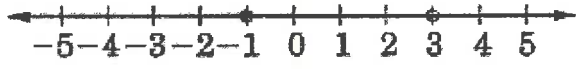
   $(a)-5$ (b)$-\frac{1}{5}$ (c)$\frac{1}{9}$ (d)$\frac{1}{5}$ (e) 5

2. What graph on the number line represent the solution to $(x \geq -1) \cup (x \geq 3)$?

   (A) 

   (B) 

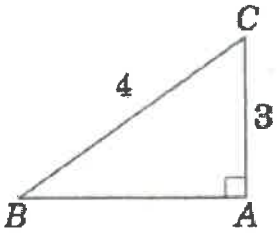
   (C) 

   (D) 

   (E) 

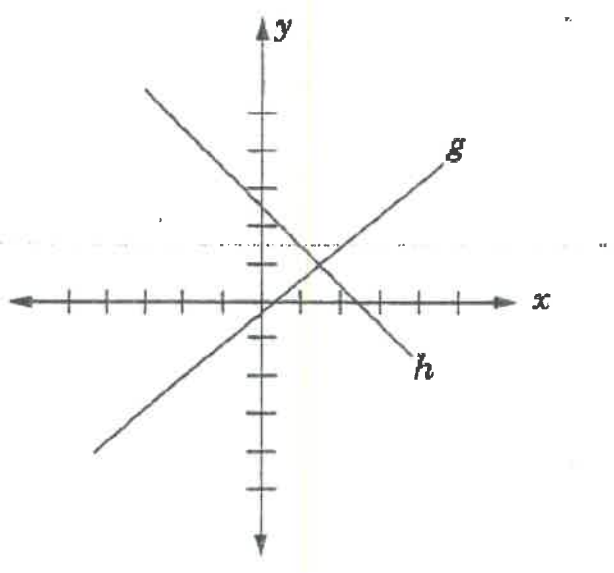
3. If $k \neq 0$, which one of the following is the solution for $\frac{1}{4}+\frac{8}{k^2}=\frac{3}{k}$?

   $(a)(2,16)$ (b) $(4,6)$ (c) $(4,8)$ (d) $(4,-6)$ (e) $(2,-16)$



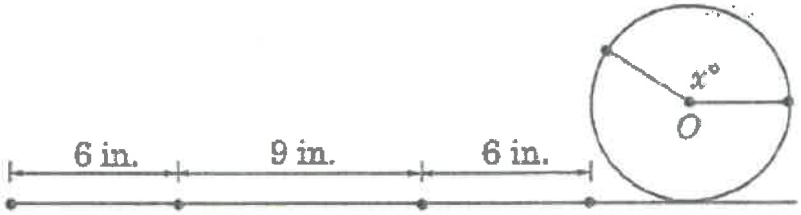
4. In the figure above, if sin B = n(cos B), then n is

   $(a)\frac{3}{5}$ (b)$\frac{\sqrt{7}}{3}$ (c)$\frac{3}{\sqrt{7}}$ (d)$\frac{3}{\sqrt{5}}$ (e)$\sqrt{\frac{7}{3}}$

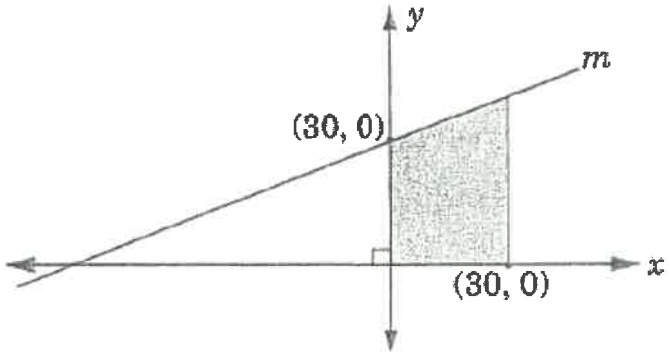


5. In the graph above, two linear functions are shown. Which of the following are true for these functions?
   I. g *is increasing for all* x II. $g(x) > h(x)$ *for some* x
   III. *There is at least one* x *for which* $g(x) = h(x)$
   (a) *I Only* (b) *I and II Only* (c) *I and III Only* (d) *II and III Only* (e) *I, II, and III*

6. If $ar^n - rx = 0$, then an expression for x in terms of a, n, and r is...
   (a) $x = ar^n$ (b) $x = ar^{n+1}$ (c) $x = ar^{n-1}$ (d) $x = ar^{2n}$ (e) $x = ar^n - 1$



7. In the figure above, a wheel with center O rolls in a straight line (without slipping) along a level track. Two spots of red dye on the wheel leave measuring marks on the track as indicated by the dots on the rack above. What is the degree measure of x?
   (a) 120 (b) 144 (c) 216 (d) 240 (e) *Cannot be determined from the infromation provided*

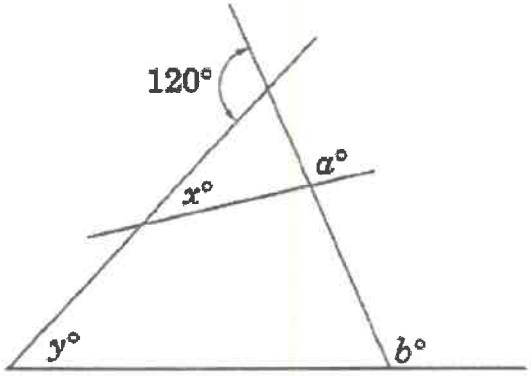


8. In the figure above, if the slope of the line m is $\frac{1}{3}$, what is the area of the shaded region?
   (a) 900 (b) 1,000 (c) 1,050 (d) 1,150 (e) 1,200

Student-produced Response Questions

9. If 2x + 1 = 10, then 4x + 1 =

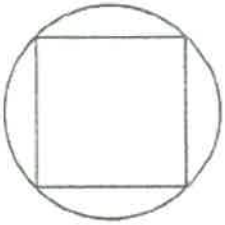
10. If the average of $\frac{1}{2}$ and its reciprocal is N, what is the value of N?



11. In the figure above, if x + y =100, what is the average of a + b?

12. If the perimeter of a right triangle is 60 and the sides are x, 2x + 4, and 3x – 4, what is the area of the triangle?

13. If $3^{14} + 3^{14} + 3^{14} = 3^x$, what is the value of x?

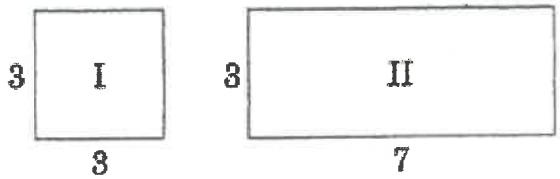


14. As square, as shown in the figure above, is inscribed in a circle. If the circumference of the circle is $\pi\sqrt{2}$, what is the area of the square?

$$\begin{array}{r} B\ A \\ B\ A \\ +\ B\ A \\ \hline A\ C \end{array}$$

15. In the addition problem above, A, B, and C are different digitis from 1 to 5, inclusive. What digit does C represent?

16. If the operations * is defined as $a * b = \frac{ab}{a+b}$, then what does $6 * (6 * 6)$ equal?

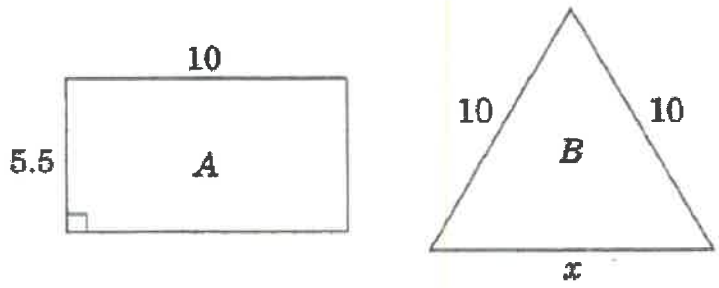


17. If a rectangular solid has two faces the same size and shape as Figure I and four faces the same size and shape as Figure II, what is the volume of the solid?

18. If $x\sqrt{x} = 8$, then what is the value of x?

19. Freebie! Everyone put 17 for #19!

Test 3 Section 3

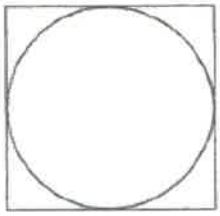


1. If rectangle A and isosceles triangle B shown above have the same perimeter, what is the value of x?
   (a) 5.5 (b) 7.5 (c) 10 (d) 11 (e) 12

2. For which of the following values of N is 3N – 1 not a prime number?
   (a) 1 (b) 2 (c) 3 (d) 4 (e) 6

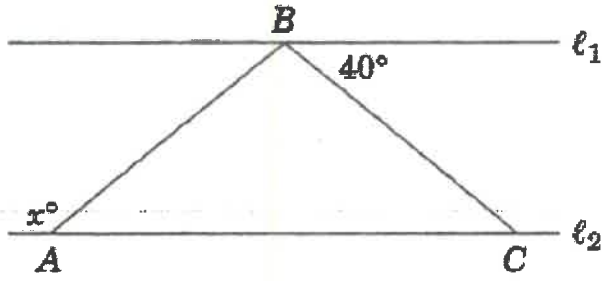
3. If the area of a lawn is 360 square meters, and Dave cuts the lawn at the rate of 12 square meters a minute, what fraction of an hour does it take to cut his lawn?
   (a) $\frac{1}{6}$ (b) $\frac{1}{4}$ (c) $\frac{1}{3}$ (d) $\frac{1}{2}$ (e) $\frac{2}{3}$

4. If 713^{10} is multiplied out completely, what is the units digit of the resulting number?
   (a) 0 (b) 1 (c) 3 (d) 7 (e) 9



5. A circle is inscribed in a square as shown above. If a side of the square is $\frac{\pi}{2}$, what is the ratio of the perimeter of the square to the circumference of the circle?
   (a) $\frac{1}{4\pi}$ (b) $\frac{1}{\pi}$ (c) $\frac{2}{\pi}$ (d) $\frac{4}{\pi}$ (e) $\frac{\pi}{2}$

6. If k >0 and $25x^2 + bx + 16 = (5x - k)^2$, for all values of x, what is the value of k – b?
   (a) -44 (b) -36 (c) 14 (d) 36 (e) 44

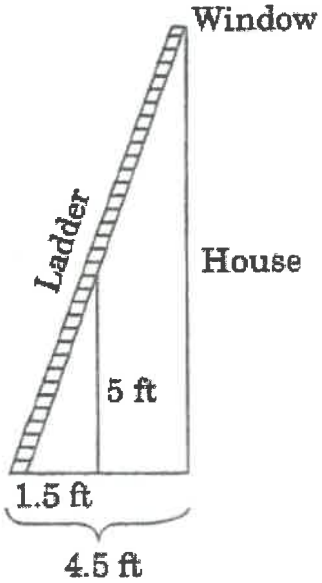


Note: Figure not drawn to scale.

7. If AB = AC and $l_1 \parallel l_2$, what is the value of x?
   (a)40 (b) 80 (c) 100 (d) 140
   (e) *Cannot be determined from the information given*

8. A perfect square is the result of squaring an integer. If K is a perfect square, then which of the following must represent the next consecutive perfect square?
   (a)$K + 1$ (b) $K + \sqrt{K}$ (c) $K + \sqrt{K} + 1$ (d) $K + 2\sqrt{K} + 1$ (e) $2K + 2\sqrt{K} + 1$

9. What percent of $\frac{1}{6}$ *is* $\frac{3}{24}$?
   (a)$12\frac{1}{2}\%$ (b) 25% (c) 50% (d) $66\frac{2}{3}\%$ (e) 75%



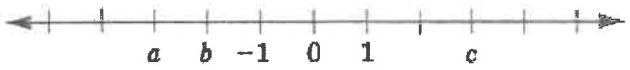
10. Leo rested a ladder against his house to repair a window. The ladder just reached the bottom of the window. The base of the ladder was 4.5 feet from the house. At a horizontal distance of 1.5 feet from the base of the ladder toward the house, the vertical rise was 5 feet. What is the distance from the bottom of Leo's window to the ground?
    (a)7.5 ft (b) 10 ft (c) 12.5 ft (d) 15 ft (e) 17.5 ft

11. If x = -2, what is the value of $|-2x^2| + |2x^{-2}|$?

(a) $16\frac{1}{16}$ (b) $8\frac{1}{2}$ (c) 0 (d) $-8\frac{1}{2}$ (e) $-16\frac{1}{16}$

12. All of the following equations are examples of a direct variation except for...

(a) $y = 13x$ (b) $y = \frac{x}{3}$ (c) $2y = mx$ (d) $\frac{x}{y} = k$ (e) $xy = k$

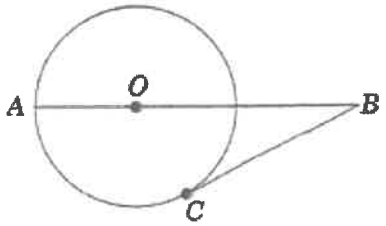


13. In the figure above, if the real numbers, a, b, and c are related as shown on the number line, which of the following is false?

(a) $|c| = c$ (b) $|a| > |b|$ (c) $|a| > 1$ (d) $|b| < 1$ (e) $|a - b| > |b - a|$

14. If $(a^2a^3)^x = a^{125}$ and $(a^y)^y = a^{\frac{16}{25}}$, where x > 1 and y > 0, what is the product of x and y?

(a) $\frac{8}{5}$ (b) 4 (c) 8 (d) 16 (e) 20



15. In the figure above, BC is the tangent to circle O. If AO = x and OB = y, then $(CB)^2$ equals...

(a) $y^2 - xy$ (b) $xy - x^2$ (c) $y^2 - x^2$ (d) $x^2 - y^2$ (e) xy

Name

Quiz

Class

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Geometry Honors Summer HW Practice A (4484)

1	A	B	C	D	E	10	A	B	C	D	E
2	A	B	C	D	E	11	A	B	C	D	E
3	A	B	C	D	E	12	A	B	C	D	E
4	A	B	C	D	E						
5	A	B	C	D	E						
6	A	B	C	D	E						
7	A	B	C	D	E						
8	A	B	C	D	E						
9	A	B	C	D	E						

Name

Quiz

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Geometry Honors Summer HW Practice B (6007)

1	A	B	C	D	E	10	A	B	C	D	E
2	A	B	C	D	E	11	A	B	C	D	E
3	A	B	C	D	E	12	A	B	C	D	E
4	A	B	C	D	E	13	A	B	C	D	E
5	A	B	C	D	E	14	A	B	C	D	E
6	A	B	C	D	E	15	A	B	C	D	E
7	A	B	C	D	E	16	A	B	C	D	E
8	A	B	C	D	E	17	A	B	C	D	E
9	A	B	C	D	E	18	A	B	C	D	E

Name

Quiz

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1 (A) (B) (C) (D) (E) 10 (A) (B) (C) (D) (E)

2 (A) (B) (C) (D) (E)

3 (A) (B) (C) (D) (E)

4 (A) (B) (C) (D) (E)

5 (A) (B) (C) (D) (E)

6 (A) (B) (C) (D) (E)

7 (A) (B) (C) (D) (E)

8 (A) (B) (C) (D) (E)

9 (A) (B) (C) (D) (E)

Geometry Honors Summer HW Practice C (2801)

Name

Quiz

Class

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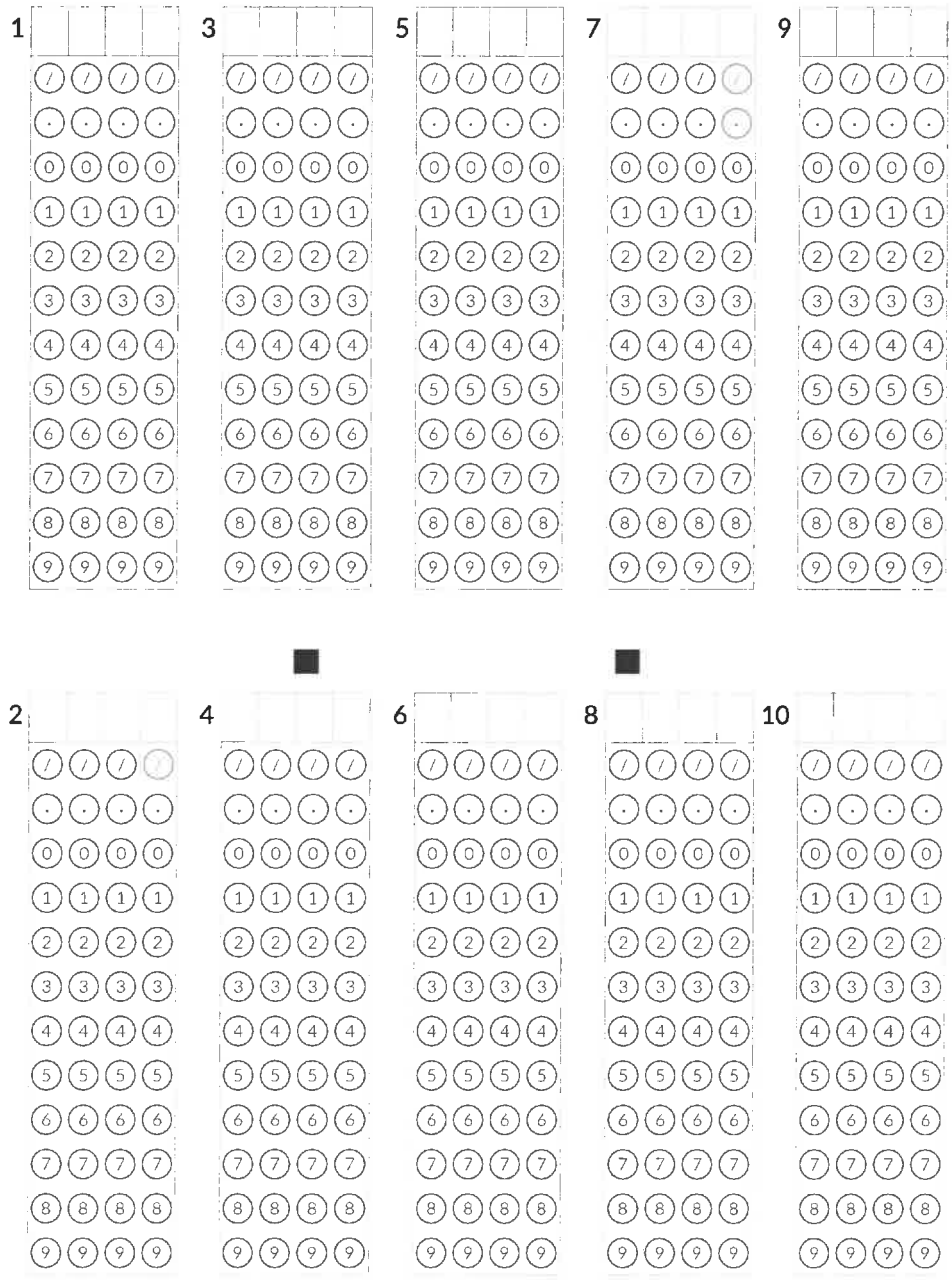
Geometry Honors Summer HW Practice D (0037)



Name

Quiz

Class

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Geometry Honors Summer HW Practice D(2) (9324)

11	A	B	C	D	E	20	A	B	C	D	E
12	A	B	C	D	E					
13	A	B	C	D	E					
14	A	B	C	D	E					
15	A	B	C	D	E					
16	A	B	C	D	E					
17	A	B	C	D	E					
18	A	B	C	D	E					
19	A	B	C	D	E					

Name

Quiz

Class

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1 (A) (B) (C) (D) (E) 10 (A) (B) (C) (D) (E)

2 (A) (B) (C) (D) (E)

3 (A) (B) (C) (D) (E)

4 (A) (B) (C) (D) (E)

5 (A) (B) (C) (D) (E)

6 (A) (B) (C) (D) (E)

7 (A) (B) (C) (D) (E)

8 (A) (B) (C) (D) (E)

9 (A) (B) (C) (D) (E)

Geometry Honors Summer HW Practice E (0358)

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Geometry Honors Summer HW Practice F (1070)

1 (A) (B) (C) (D) (E) 10 (A) (B) (C) (D) (E)

2 (A) (B) (C) (D) (E)

3 (A) (B) (C) (D) (E)

4 (A) (B) (C) (D) (E)

5 (A) (B) (C) (D) (E)

6 (A) (B) (C) (D) (E)

7 (A) (B) (C) (D) (E)

8 (A) (B) (C) (D) (E)

9 (A) (B) (C) (D) (E)

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Geometry Honors Summer HW Practice G (1607)

1	A	B	C	D	E	11	A	B	C	D	E
2	A	B	C	D	E	12	A	B	C	D	E
3	A	B	C	D	E	13	A	B	C	D	E
4	A	B	C	D	E	14	A	B	C	D	E
5	A	B	C	D	E	15	A	B	C	D	E
6	A	B	C	D	E	16	A	B	C	D	E
7	A	B	C	D	E	17	A	B	C	D	E
8	A	B	C	D	E	18	A	B	C	D	E
9	A	B	C	D	E	19	A	B	C	D	E
10	A	B	C	D	E	20	A	B	C	D	E

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Geometry Honors Summer HW Practice H (8846)

1	A	B	C	D	E	10	A	B	C	D	E
2	A	B	C	D	E	11	A	B	C	D	E
3	A	B	C	D	E	12	A	B	C	D	E
4	A	B	C	D	E						
5	A	B	C	D	E						
6	A	B	C	D	E						
7	A	B	C	D	E						
8	A	B	C	D	E						
9	A	B	C	D	E						

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Geometry Honors Summer HW Practice I (5129)

1	A	B	C	D	E	10	A	B	C	D	E
2	A	B	C	D	E	11	A	B	C	D	E
3	A	B	C	D	E	12	A	B	C	D	E
4	A	B	C	D	E	13	A	B	C	D	E
5	A	B	C	D	E	14	A	B	C	D	E
6	A	B	C	D	E	15	A	B	C	D	E
7	A	B	C	D	E	16	A	B	C	D	E
8	A	B	C	D	E	17	A	B	C	D	E
9	A	B	C	D	E						

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Geometry Honors Summer HW Practice J (3550)

1	A	B	C	D	E	10	A	B	C	D	E
2	A	B	C	D	E	11	A	B	C	D	E
3	A	B	C	D	E	12	A	B	C	D	E
4	A	B	C	D	E	13	A	B	C	D	E
5	A	B	C	D	E	14	A	B	C	D	E
6	A	B	C	D	E	15	A	B	C	D	E
7	A	B	C	D	E						
8	A	B	C	D	E						
9	A	B	C	D	E						

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Geometry Honors Summer HW Practice K (3371)

1	A	B	C	D	E	11	A	B	C	D	E
2	A	B	C	D	E	12	A	B	C	D	E
3	A	B	C	D	E	13	A	B	C	D	E
4	A	B	C	D	E	14	A	B	C	D	E
5	A	B	C	D	E	15	A	B	C	D	E
6	A	B	C	D	E	16	A	B	C	D	E
7	A	B	C	D	E	17	A	B	C	D	E
8	A	B	C	D	E	18	A	B	C	D	E
9	A	B	C	D	E	19	A	B	C	D	E
10	A	B	C	D	E	20	A	B	C	D	E

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Geometry Honors Summer HW Test #3 Section #1 (8309)

1	A	B	C	D	E	11	A	B	C	D	E
2	A	B	C	D	E	12	A	B	C	D	E
3	A	B	C	D	E	13	A	B	C	D	E
4	A	B	C	D	E	14	A	B	C	D	E
5	A	B	C	D	E	15	A	B	C	D	E
6	A	B	C	D	E	16	A	B	C	D	E
7	A	B	C	D	E	17	A	B	C	D	E
8	A	B	C	D	E	18	A	B	C	D	E
9	A	B	C	D	E	19	A	B	C	D	E
10	A	B	C	D	E	20	A	B	C	D	E

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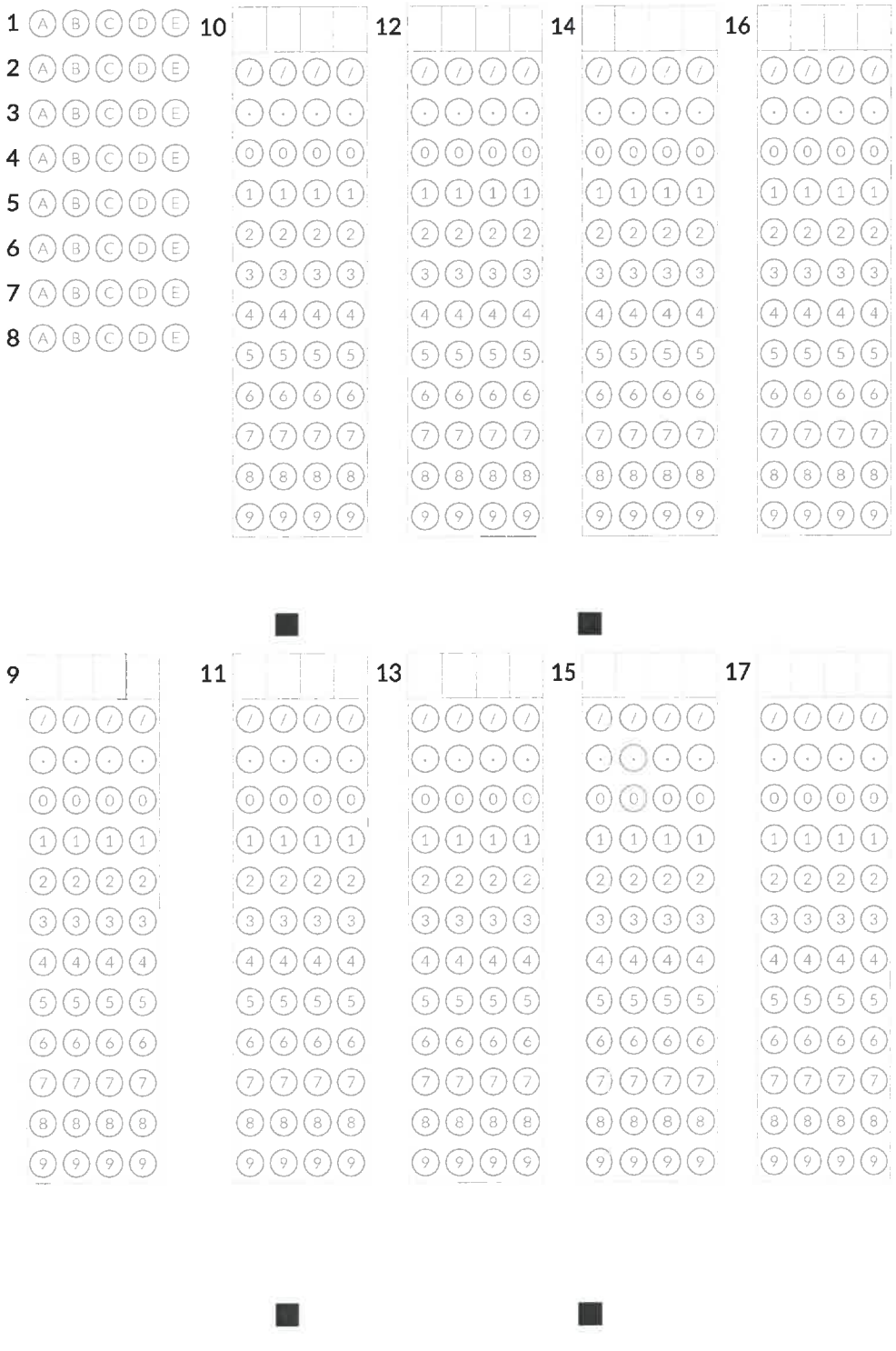
Geometry Honors Summer HW Test #3 Section #2 (3324)



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Geometry Honors Summer HW Test #3 Section #2(2) (8888)

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Geometry Honors Summer HW Test #3 Section #3 (3895)

1	A	B	C	D	E	10	A	B	C	D	E
2	A	B	C	D	E	11	A	B	C	D	E
3	A	B	C	D	E	12	A	B	C	D	E
4	A	B	C	D	E	13	A	B	C	D	E
5	A	B	C	D	E	14	A	B	C	D	E
6	A	B	C	D	E	15	A	B	C	D	E
7	A	B	C	D	E						
8	A	B	C	D	E						
9	A	B	C	D	E						