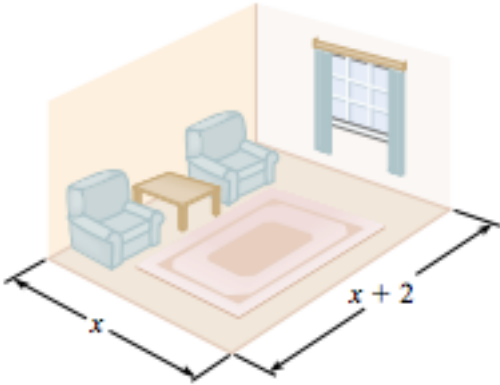


Topics:

- Unit Conversions
- Length and Area
- Compound shapes
- Removing Area
- Area and Perimeter with radicals
- Isosceles and Equilateral triangles
- Pythagorean Theorem and distance formula
- Triangles Area and Perimeter
- Quadrilaterals Area and Perimeter
- Area and Circumference of Circles
- Arc Length and Sectors

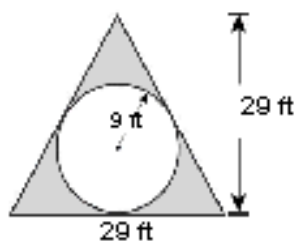
Unit Conversions	
1. Convert 60 mi per hour into km per sec.	2. Convert 3000 square inches into square yards.
Area & Perimeter with Factoring	
3. The length of a rectangle is 3 times as long as the width. Find the perimeter of the rectangle given that it's area is 4.32 cm^2 .	
4.	<p>Ronald's living room is 2 feet longer than it is wide, and its area is 168 square feet. What are the dimensions of the room?</p> 
5. Find the perimeter of a rectangular photograph is 36 cm. Then length is 4 cm greater than the width. Find the width and the length.	

6. Find the length and width of a rectangle whose perimeter is 20 feet and whose area is 21 square feet.

Compound Shapes

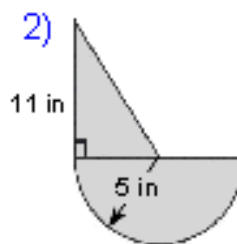
Find the area of each figure, round your answer to one decimal place if necessary.

7.



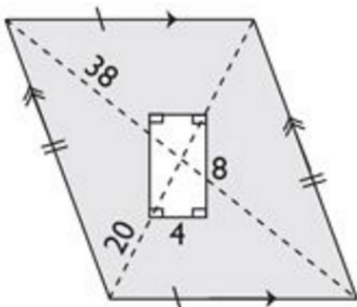
Area: _____

8.



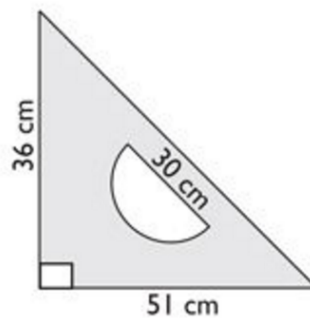
Area: _____

9.



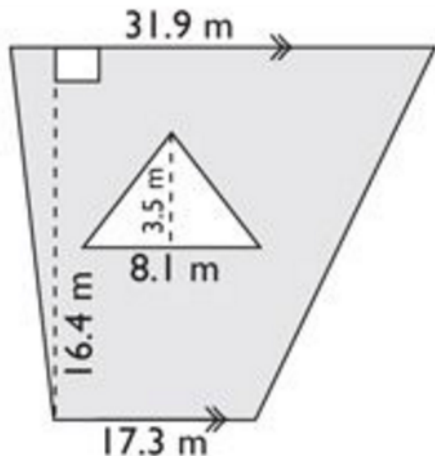
A =

10.



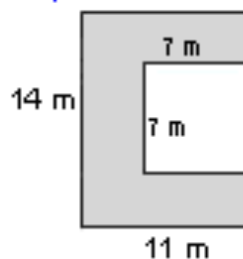
A =

11.



A =

12.

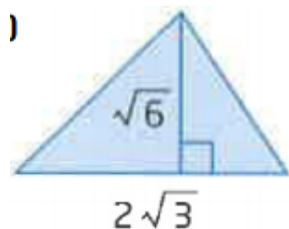


Area: _____

Perimeter: _____

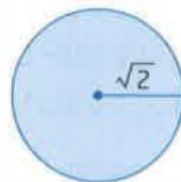
Area and Perimeter with Radicals

1. Find the area of the triangle.



A =

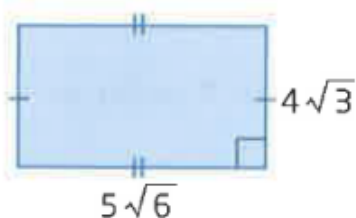
2. Find the area and circumference of the circle.



A =

i. C =

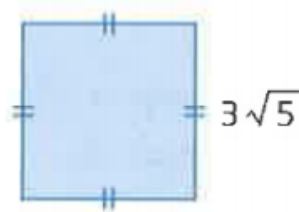
3. Find the area and perimeter of the rectangle.



A =

P =

4. Find the area and perimeter of the square.

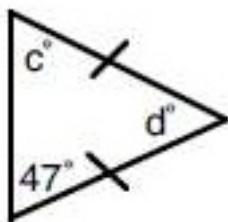


A =

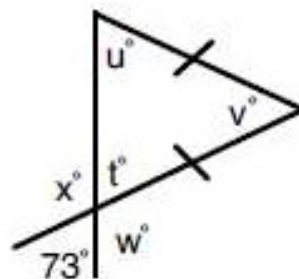
P =

Isosceles and Equilateral Triangles

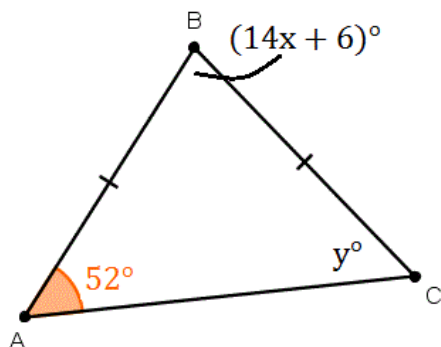
5. Find c and d.



6. Find all the missing angles.

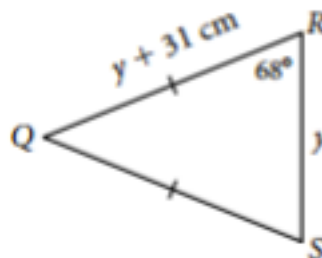


7. Find x and y.

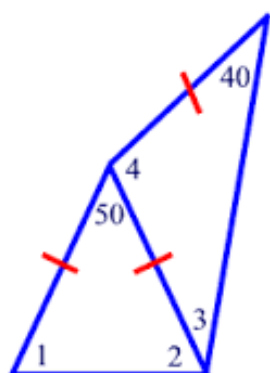


8. The perimeter of $\triangle QRS$ is 344 cm.

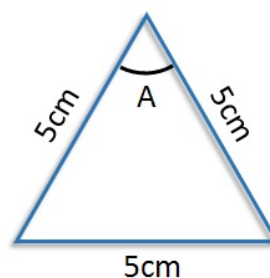
Find $m\angle Q =$ _____, $m\angle S =$ _____, and $\overline{QR} =$ _____



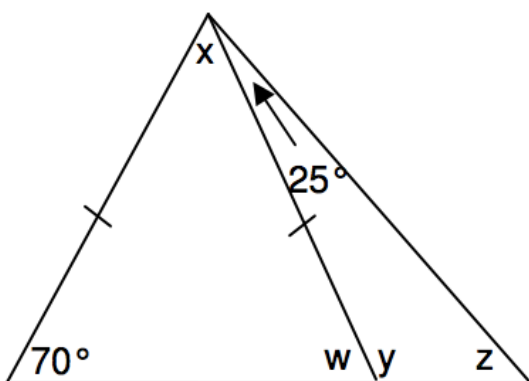
9. Find measure of angles 1, 2, and 3.



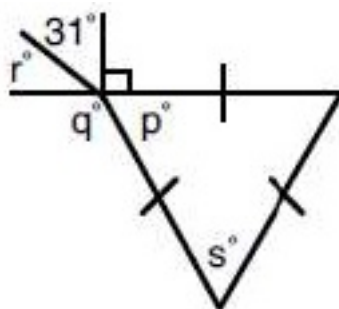
10. Find measure of angle A.



11. Find w , x , y , and z .

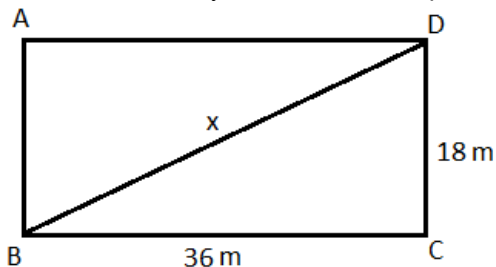


12. Find all the missing angles.

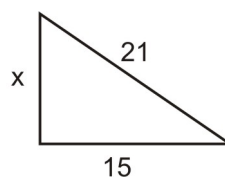


Pythagorean Theorem

13. Find x . Leave your answer in simplified radical form.

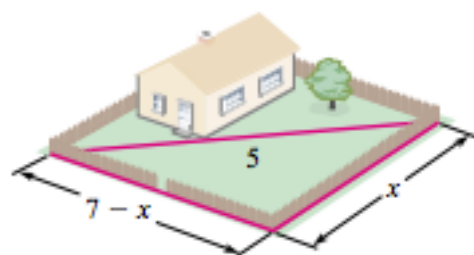


14. Find x . Leave your answer in simplified radical form.

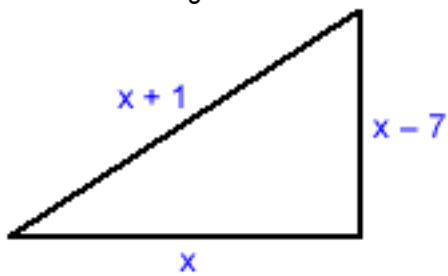


15.

Shirley used 14 meters of fencing to enclose a rectangular region. To be sure that the region was a rectangle, she measured the diagonals and found that they were 5 meters each. (If the opposite sides of a quadrilateral are equal and the diagonals are equal, then the quadrilateral is a rectangle.) What are the length and width of the rectangle?

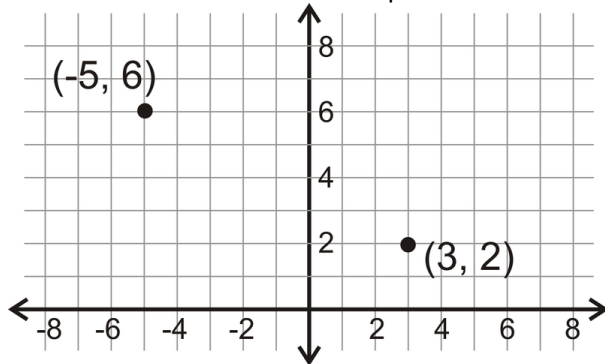


16. Find the length of each side of the right triangle below.



Distance Formula

17. Find the distance between the 2 points.

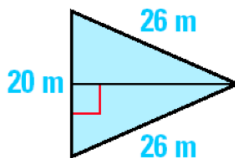


18. What is the distance between $(-3, -8)$ and $(5, -2)$?

19. What is the distance between $(8, -9)$ and $(2, -3)$?

Triangles, quadrilaterals, and circles.

20. Find the area of the triangle below.



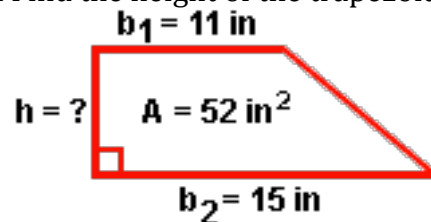
21. Find the diameter of the circle with an area of 59 ft^2 .

$$A = 59 \text{ ft}^2$$

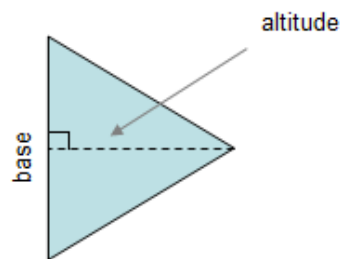
$$d = \underline{\quad}$$

22. The circumference of a circle is 8π , find the area.

23. Find the height of the trapezoid below.



24. The area of a triangular sheet of paper is 14 square inches. One side of the triangle is 3 inches longer than the altitude to that side. Find the length of the one side and the length of the altitude to that side.



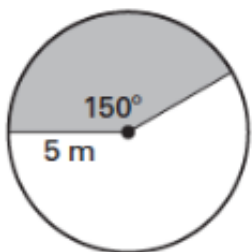
25. The area of a triangle is 51 square inches. One side of the triangle is 1 inch less than three times the length of the altitude to that side. Find the length of that side and the length of the altitude to that side.

26. A circle has an area of 81 in^2 . What is the circumference of the circle?

27. A circle has a circumference of 12 cm. What is the area of the circle?

Arc length and Sectors

28. Give your answer in terms of π and a simplified fraction.



Sector Area:

Arc Length:

29. Find the radius of a sector whose area of $50 \pi \text{ in}^2$ and $\theta = 30^\circ$.

30. Find the area of a sector whose arc length is $50 \pi \text{ ft}$ and $\theta = 150^\circ$.

ACT PREP – Geometry Review

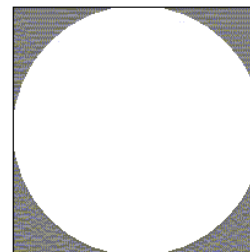
- _____ 1. If a circle has a circumference of 25.12 inches, what is the area? Use 3.14 for π .
- A. 4 in^2
 - B. 8 in^2
 - C. 12.56 in^2
 - D. 50.24 in^2
 - E. 200.96 in^2
- _____ 2. Edging cost \$2.32 per 12-inch stone and you want a double layer of edging around your flower bed that is 6 yards by 1 yard. How much will edging your flowerbed cost?
- A. \$32.48
 - B. \$64.96
 - C. \$97.44
 - D. \$129.92
 - E. \$194.88
- _____ 3. If the perimeter of a rectangular house is 144 yards, and the length is 36 feet, what is the width of the house?
- A. 10 yards
 - B. 18 yards
 - C. 28 feet
 - D. 32 feet
 - E. 36 yards
- _____ 4. If the area of a square flowerbed is 81 square feet, then how many yards is the perimeter of the flowerbed?
- A. 9 ft
 - B. 12 ft
 - C. 18 ft
 - D. 36 ft
 - E. 40.5 ft
- _____ 5. What is the cost in dollars to steam clean a room W yards wide and L yards long if the steam cleaners charge 10 cents per square foot?
- A. $0.9WL$
 - B. $0.3WL$
 - C. $0.1WL$
 - D. $9WL$
 - E. $3WL$
- _____ 6. A rectangle with area 2592 square inches is twice as long as it is wide. What is the length of the rectangle, in feet?
- A. 3
 - B. 9
 - C. 18
 - D. 36
 - E. 72

_____ 7. What is the area of a rectangle with a length of 36 and diagonals of 39?

- A. 108 units²
- B. 540 units²
- C. 702 units²
- D. 1404 units²
- E. 1621 units²

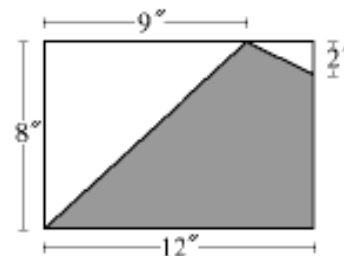
_____ 8. In the figure below, determine the area of the shaded region of the figure.

- A. 9.354 units²
- B. 10.52 units²
- C. 16.437 units²
- D. 49 units²
- E. 104.86 units²



_____ 9. Lengths are shown in inches on the drawing of the rectangle below. What is the shaded area, in square inches?

- A. 18
- B. 24
- C. 57
- D. 78
- E. 96



_____ 10. What will it cost to carpet a room with indoor/outdoor carpet if the room is 10 feet wide and 12 feet long? The carpet costs \$12.51 per square yard.

- A. \$166.80
- B. \$175.90
- C. \$184.30
- D. \$189.90
- E. \$192.20

_____ 11. Sally has three pieces of material. The first piece is 1 yd. 2 ft. 6 in. long, the second piece is 2 yd. 1 ft. 5 in long, and the third piece is 4 yd. 2ft. 8in long. How much material does Sally have?

- A. 7 yd. 1 ft. 8 in.
- B. 8 yd. 4 ft. 4 in.
- C. 8 yd. 11 in.
- D. 9 yd. 7 in.
- E. 10 yd.

_____ 12. If one inch equals 2.54 cm, how many centimeters tall is a 76- inch man?

- A. 20 cm
- B. 29.92 cm
- C. 193.04 cm
- D. 300.04 cm
- E. 593.04 cm

_____ 13. The diameter of a wheel is 36 inches and each revolution of the wheel covers the distance of one circumference. To the nearest number of revolutions, how many revolutions of the wheel must be completed before the bike covers 1000 feet?

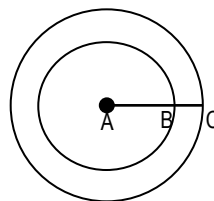
- A. 3
- B. 9
- C. 28
- D. 106
- E. 9420

_____ 14. You have a round pool with circumference of 56.52 feet. You want to buy a cover that costs \$46 per square yard. How much will the cover for your pool cost?

- A. 254.34
- B. 1299.96
- C. 2599.92
- D. 11699.64
- E. None of the above.

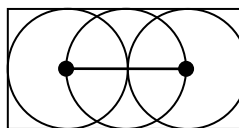
_____ 15. The circles below are concentric. If $AC = 8$ inches and $BC = 2$ inches, what is the ratio of the area of the larger circle to the area of the smaller circle.

- A. 4:3
- B. 3:1
- C. 9:1
- D. 16:9
- E. None of the above.



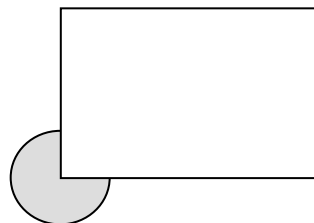
_____ 16. Three identical circles, each with an area of 36π square feet, are inscribed inside a rectangle as seen below. Find the area of the rectangle in square yards.

- A. 32
- B. 48
- C. 288
- D. 432
- E. None of the above.



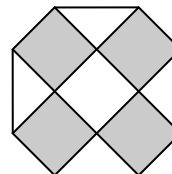
19. Your dog is attached to a 12 foot leash that is attached to the edge of your home as seen below. You want to cover the ground your dog can roam on with bark that costs \$5.00 for a bag that will cover a square yard. How much will you spend?

A. \$37.68
 B. \$188.40
 C. \$339.12
 D. \$1695.60
 E. None of the above.



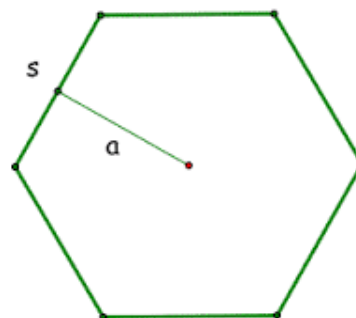
20. In the picture below, the five squares are congruent and the four right triangles are congruent. What is the probability that a randomly thrown dart that hits the target hits the white region?

A. 0.43
 B. 0.50
 C. 0.57
 D. 0.61
 E. None of the above.



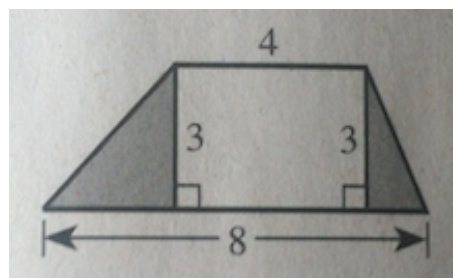
21. The side length of a regular hexagon is 6 inches and the area is 93.6 square inches. Find the length of the apothem.

A. 4.8
 B. 5.2
 C. 10.4
 D. 15.6
 E. None of the above.



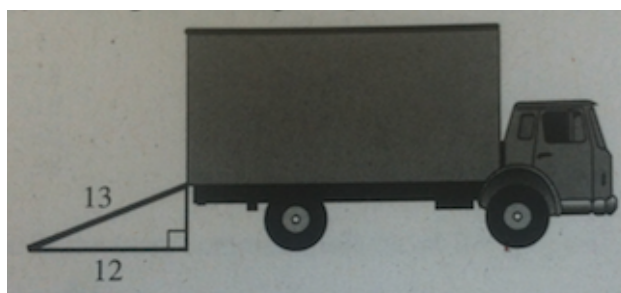
22. The trapezoid below is divided into 2 triangles and 1 rectangle. Lengths are given in inches. What is the combined area, in square inches, of the 2 shaded triangles?

A. 4
 B. 6
 C. 9
 D. 12
 E. 18



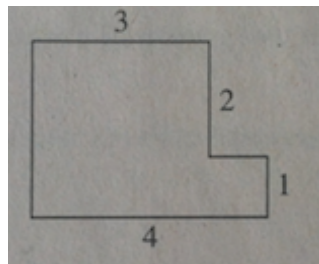
23. A ramp for loading trucks is 13 feet long and covers 12 feet along the level ground, as shown below. How many feet high is the highest point on the ramp?

A. 1
 B. 2
 C. 4
 D. 5
 E. $6\frac{1}{4}$



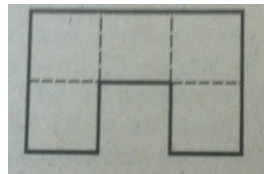
- _____ 24. In the figure below, all the line segments are either horizontal or vertical and the dimensions given are in inches. What is the perimeter, in inches, of the figure?

A. 10
B. 12
C. 13
D. 14
E. 16



- _____ 25. The 8-sided figure below is divided into 5 congruent squares. The total area of the 5 squares is 125 square inches. What is the perimeter, in inches, of the figure?

A. 25
B. 60
C. 80
D. 100
E. 125



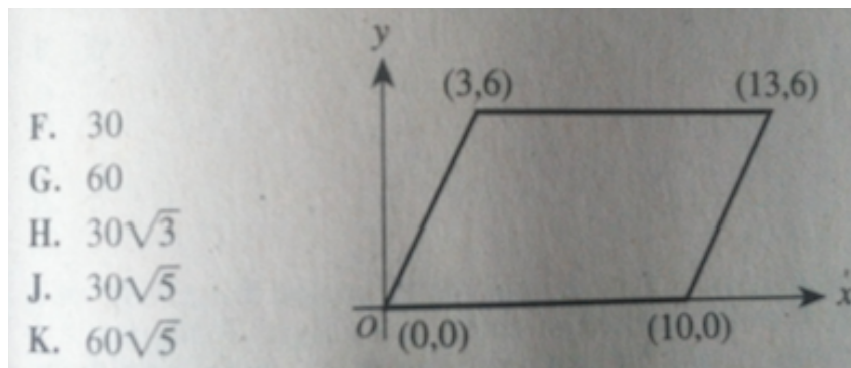
- _____ 26. What is the distance, in coordinate units, between the points $(-3, 5)$ and $(4, -1)$ in the standard (x, y) coordinate plane?

F. $\sqrt{13}$
G. $\sqrt{17}$
H. $\sqrt{85}$
J. 13
K. 85

- _____ 27. What is the perimeter, in centimeters, of a rectangle with length 15 cm and width 6 cm?

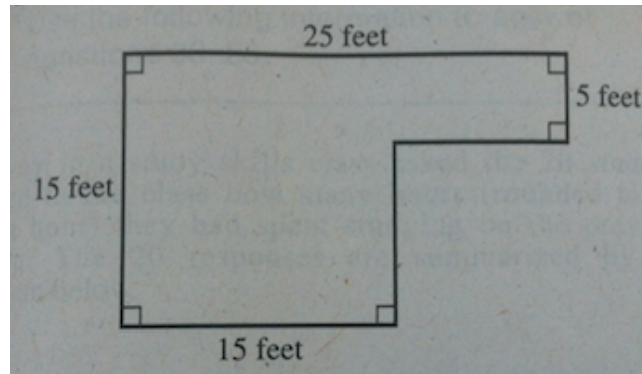
A. 21
B. 30
C. 42
D. 90
E. 180

- _____ 28. In the standard (x, y) coordinate plane below, the points $(0, 0)$, $(10, 0)$, $(13, 6)$, and $(3, 6)$ are the vertices of a parallelogram. What is the area, in square coordinate units, of the parallelogram?



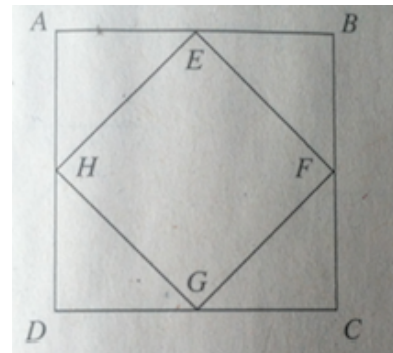
29. What is the area, in square feet, of the figure below?

- A. 60
- B. 80
- C. 275
- D. 375
- E. 450



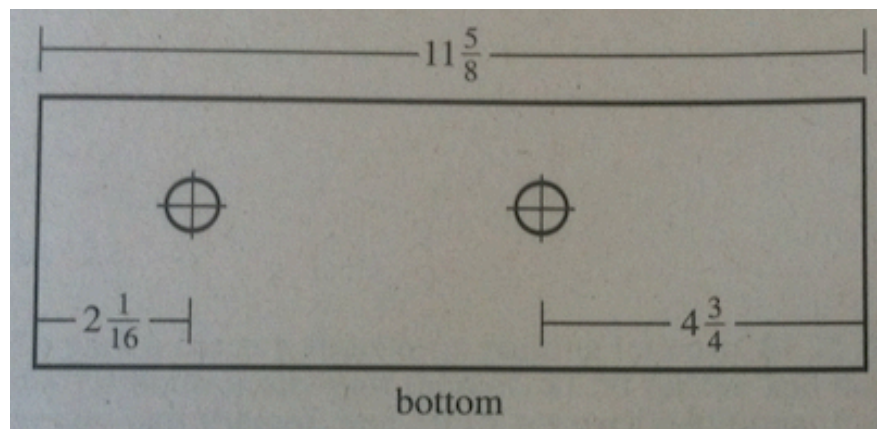
30. In the figure below, ABCD is a square and E, F, G, and H are the midpoints of its sides. If AB = 12 inches, what is the perimeter of EFGH, in inches?

- F. 24
- G. $24\sqrt{2}$
- H. $36\sqrt{2}$
- J. $48\sqrt{2}$
- K. 72



31. A machine part is diagrammed in the figure below with the dimensions given in inches. If the centers of the circles lie on the same line parallel to the bottom of the part, what is the distance, in inches, between the centers of the 2 holes in the machine part?

- A. $5\frac{3}{16}$
- B. $5\frac{1}{16}$
- C. 5
- D. $4\frac{13}{16}$
- E. $4\frac{3}{16}$

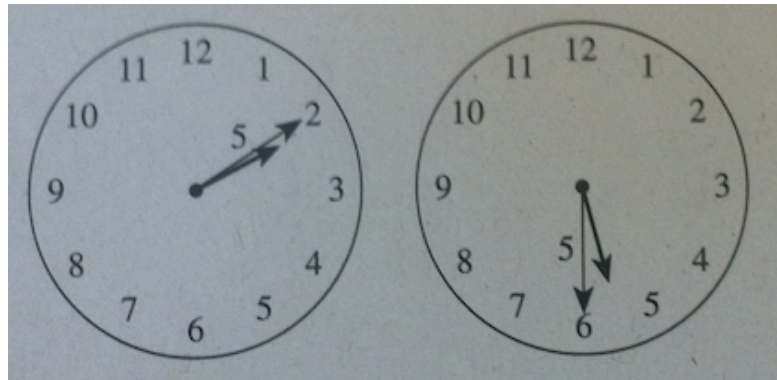


_____ 32. In the standard (x, y) coordinate plane, what is the distance, in coordinate units, between (-3, -2) and (5, 5)?

- F. $\sqrt{13}$
- G. $\sqrt{15}$
- H. $\sqrt{113}$
- J. 5
- K. 15

_____ 33. As shown in the figure below, a clock has a minute hand that measures 5 cm from its tip to the center of the clock. To the nearest centimeter, what is the distance traveled by the tip of the minute hand between 2:10 pm and 5:30 pm?

- A. 31
- B. 68
- C. 101
- D. 105
- E. 173



_____ 34. Jenny's birthday cake is circular and has a 30 cm radius. Her slice creates an arc with a central angle of 120° . What is the area of Jenny's slice of cake? Give your answer in terms of π .

- A. $300\pi \text{ cm}^2$
- B. $10\pi \text{ cm}^2$
- C. $150\pi \text{ cm}^2$
- D. $3000\pi \text{ cm}^2$
- E. $3600\pi \text{ cm}^2$

_____ 35. Find the arc length of an arc with measure 130° in a circle with a radius of 2 inches. Round to the nearest tenth.

- A. 4.5 in
- B. 2.3 in
- C. 10.2 in
- D. 0.5 in
- E. 3 in

