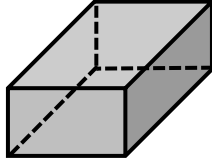


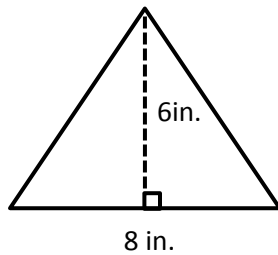
Applications of Geometry

1. Michael has a box that is a rectangular prism, as shown below.



Which of the following statements exactly describes a rectangular prism?

- A It has 8 faces, 8 edges, and 6 vertices.
 - B It has 8 faces, 10 edges, and 8 vertices.
 - C It has 6 faces, 10 edges, and 6 vertices.
 - D It has 6 faces, 12 edges, and 8 vertices.
2. Willard has a stained glass window with one triangular piece, as shown below.

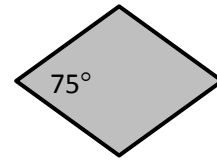


[not drawn to scale]

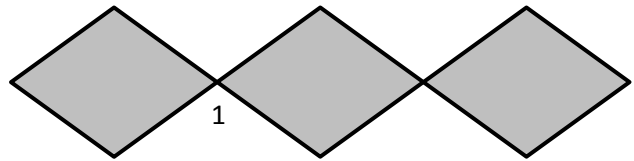
What is the area, in square inches, of the triangular piece?

- A 14
- B 24
- C 48
- D 96

3. A rhombus is shown.



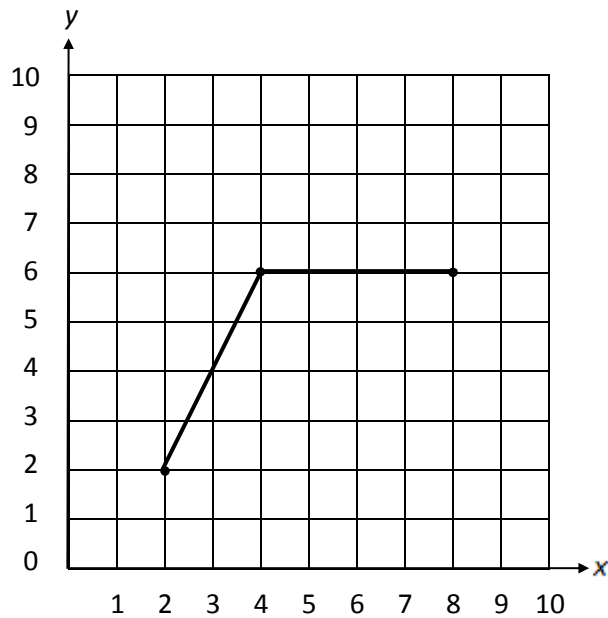
The rhombus is used to make a design.



What is $m \angle 1$?

- A. 15°
 - B. 75°
 - C. 105°
 - D. 150°
4. Which of the geometric figures named below has exactly 1 vertex?
- A Cone
 - B Cube
 - C Cylinder
 - D Sphere
5. Keesha will paint one rectangular wall of her bedroom. The wall measures 10 feet by 8 feet. What is the area of the wall that Keesha will paint?
- A 18 square feet
 - B 64 square feet
 - C 80 square feet
 - D 100 square feet

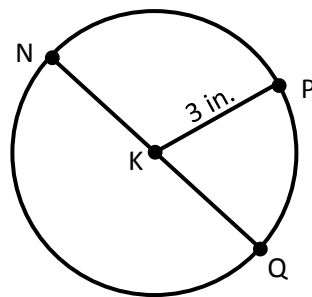
6. Michael plots three points on the grid below and connects the points.



What coordinates should Michael plot next if he wants to draw a parallelogram?

- A (10, 2)
- B (6, 2)
- C (2, 8)
- D (2, 6)

7. A circle has a diameter, \overline{NQ} , as shown below.



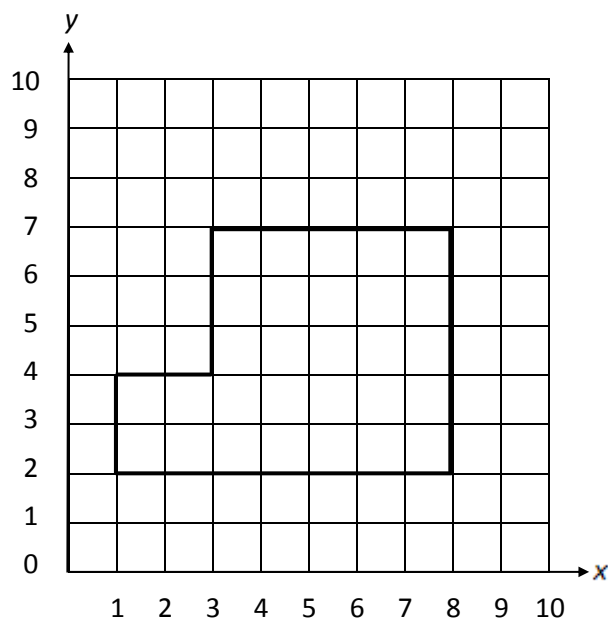
[not drawn to scale]

The radius \overline{KP} is 3 inches. What is the length of \overline{NQ} ?

- A 3 inches
- B 4 inches
- C 6 inches
- D 9 inches

8. Margaret claims that all rectangles are squares. Bradley claims that all squares are rectangles. Use words, numbers or pictures to explain whether Margaret's or Bradley's claim is correct.

9. A diagram of a classroom floor at Hilldale Middle School is drawn on the grid below.



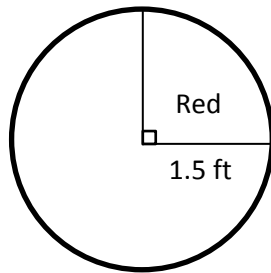
What is the perimeter of the classroom?

- A 12 units
- B 24 units
- C 29 units
- D 35 units

10. Olivia measures the diameter of a circle. If the diameter is 32 centimeters, what is the **radius**, in centimeters?

- A 64
- B 48
- C 32
- D 16

13. Janice is painting a circular table top, as shown below.



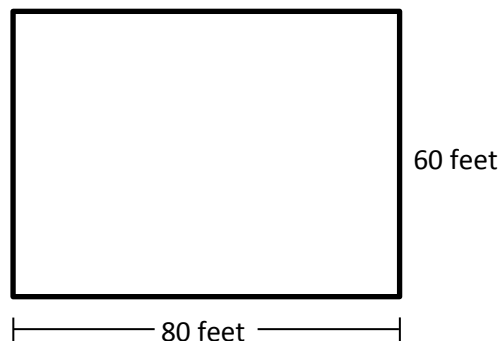
[not drawn to scale]

Janice needs to find the area of the red section of the circular table top in order to buy the right amount of paint. What is the area of the **red** section of the circular table top? Round your answer to the nearest hundredths place.

Leave your answer in terms of π .

14. A diagram of Mr. Hill's yard is shown below.

MR. HILL'S YARD



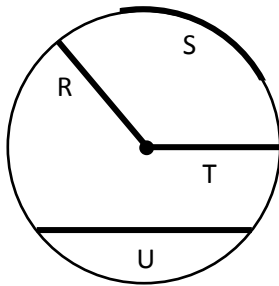
[not drawn to scale]

Mr. Hill wants to plant grass seed in his yard. He needs to know how much seed he should buy. What is the area of Mr. Hill's yard?

15. The largest pizza for sale at Shawna's Pizza Parlor has a radius of 12 inches. What is the diameter of this pizza?

- A 6 inches
- B 24 inches
- C 36 inches
- D 48 inches

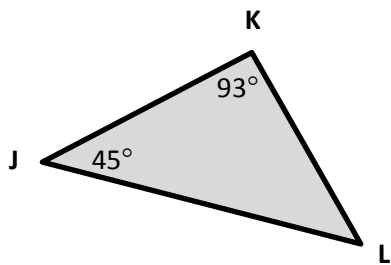
16. The circle below has four labeled parts.



Which part of the circle does segment U represent?

- A arc
- B chord
- C diameter
- D radius

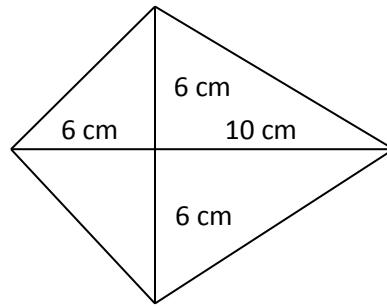
17. A triangle is shown.



What is $m\angle L$?

- A 42°
- B 45°
- C 48°
- D 138°

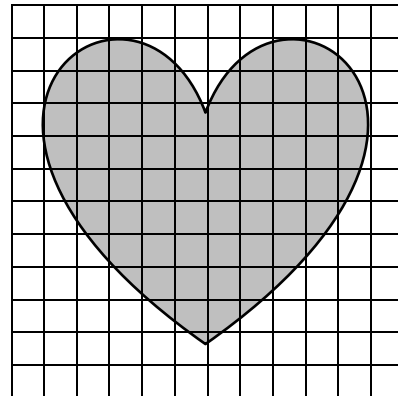
18. A scale drawing of a kite is shown.



What is the area of the kite?

- A 28 cm^2
- B 60 cm^2
- C 96 cm^2
- D 192 cm^2

19. A heart shape is cut from a gridded piece of paper.



What is the approximate area of the heart?

- A 50 square units
- B 70 square units
- C 90 square units
- D 144 square units

20. The surface area of a cube is 384 square inches. What is the volume of the cube?

- A 8 cubic inches
- B 16 cubic inches
- C 256 cubic inches
- D 512 cubic inches