

# Oklahoma School Testing Program



Oklahoma Core Curriculum Tests

## 2009–2010 Released Items

End-of-Instruction  
ACE Geometry

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Oklahoma State Department of Education  
Oklahoma City, Oklahoma



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# Section 1

# Section 1

## Directions

Read each question and choose the best answer.

1

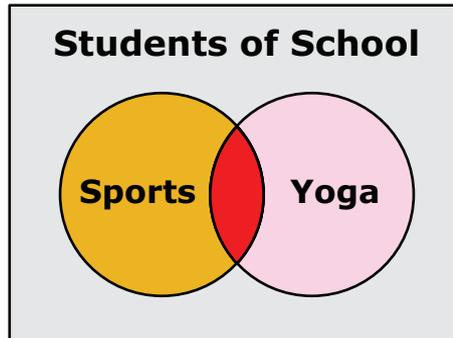
Rita, Lily, Arnold, and Joseph each own one car. The cars are numbered 25, 27, 28, and 32.

- Lily's car number is an odd number.
- Rita's car number is divisible by 2.
- Joseph's car number is a multiple of 7.
- Arnold's car number is 2 less than Lily's car number.

Which person has car number 27?

- A Lily
- B Rita
- C Arnold
- D Joseph

2



**Which statement is true according to the diagram?**

- F** All students of the school took part in both sports and yoga.
- G** Students who did not take part in yoga participated in sports.
- H** All students who took part in yoga did not participate in sports.
- J** Some students of the school participated in both sports and yoga.

3

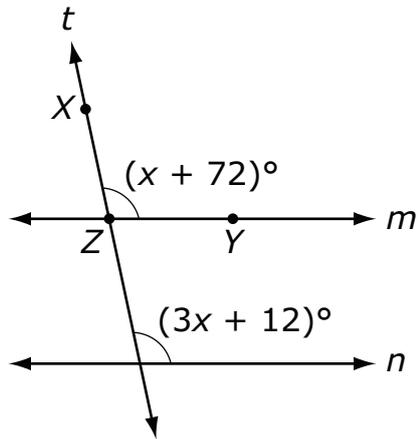
**If opposite angles of a quadrilateral are congruent, then it is a parallelogram.**

**Which statement is the converse of the above statement?**

- A** If a quadrilateral is a parallelogram, then its opposite angles are congruent.
- B** If a quadrilateral is not a parallelogram, then its opposite angles are not congruent.
- C** If the opposite angles of a quadrilateral are congruent, then it is not a parallelogram.
- D** If the opposite angles of a quadrilateral are not congruent, then it is not a parallelogram.

## Section 1

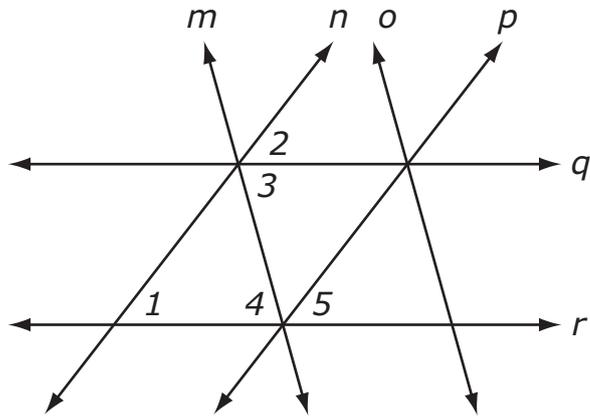
4 Transversal  $t$  cuts parallel lines  $m$  and  $n$ .



What is the measure of  $\angle XZY$ ?

- F  $102^\circ$
- G  $113^\circ$
- H  $135^\circ$
- J  $146^\circ$

5

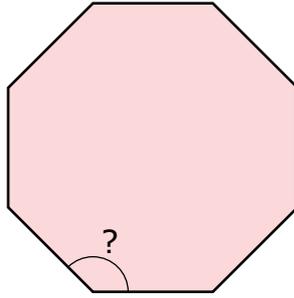


Which angle must be congruent to  $\angle 1$  for lines  $n$  and  $p$  to be parallel?

- A  $\angle 2$
- B  $\angle 3$
- C  $\angle 4$
- D  $\angle 5$

## Section 1

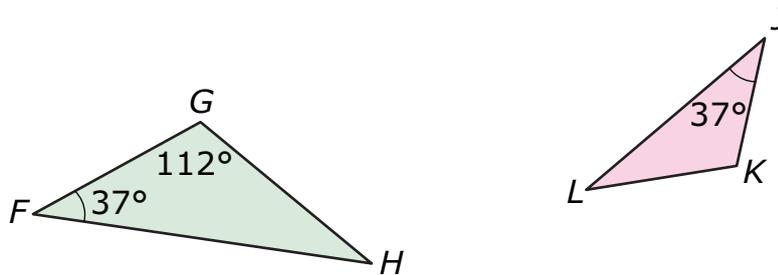
- 6** Each stop sign is made in the shape of a regular octagon.



What is the measure in degrees of an interior angle of a regular octagon?

- F**  $135^\circ$   
**G**  $150^\circ$   
**H**  $210^\circ$   
**J**  $225^\circ$
- 7** Victoria used 140 yards of fencing to make a rectangular pigpen. The length of a short side of the pen is 30 yards. What is the length of a long side of the pen?
- A** 40 yards  
**B** 55 yards  
**C** 70 yards  
**D** 110 yards

8



What additional information will prove that  $\triangle FGH$  and  $\triangle JKL$  are similar?

- F The measure of  $\angle K$  is  $31^\circ$ .
- G The measure of  $\angle K$  is  $37^\circ$ .
- H The measure of  $\angle L$  is  $31^\circ$ .
- J The measure of  $\angle L$  is  $112^\circ$ .

9 Rectangle  $EFGH$  is similar to rectangle  $PQRS$ . The length of side  $EF$  is 24 centimeters, the length of side  $FG$  is 9 centimeters, and the length of side  $PQ$  is 8 centimeters. What is the difference in the areas of  $EFGH$  and  $PQRS$ ?

- A  $44 \text{ cm}^2$
- B  $72 \text{ cm}^2$
- C  $192 \text{ cm}^2$
- D  $216 \text{ cm}^2$

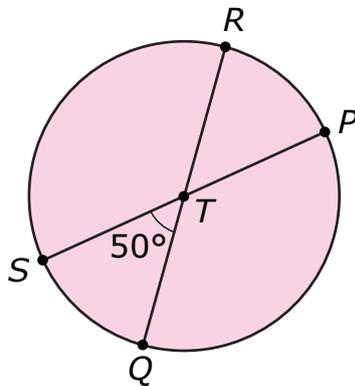
## Section 1

- 10 Circles X and Y are congruent. The area of Circle X is  $9\pi$  square inches. What is the circumference of Circle Y?

$$A = \pi r^2$$
$$C = 2\pi r$$

- F  $5\pi$  in.
- G  $6\pi$  in.
- H  $8\pi$  in.
- J  $9\pi$  in.

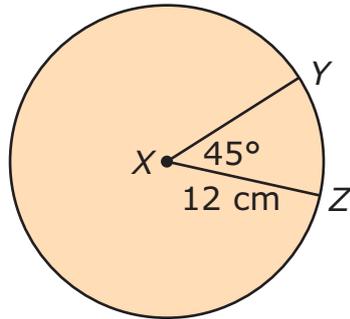
- 11 In the figure below, point  $T$  is the center.



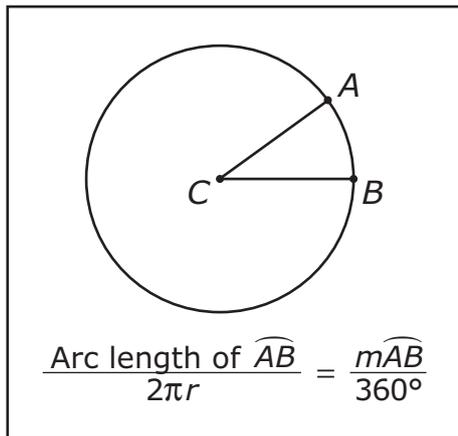
What is the measure of  $\widehat{QPS}$ ?

- A  $50^\circ$
- B  $130^\circ$
- C  $230^\circ$
- D  $310^\circ$

- 12 The center of this circle is  $X$ .



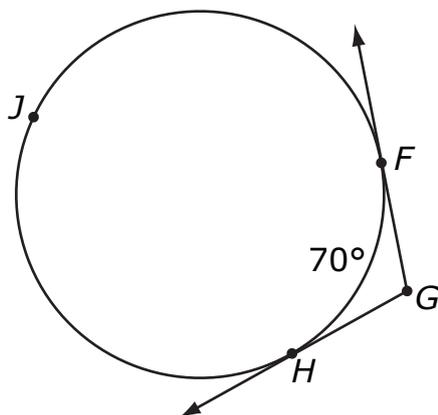
What is the length of arc  $YZ$ ?



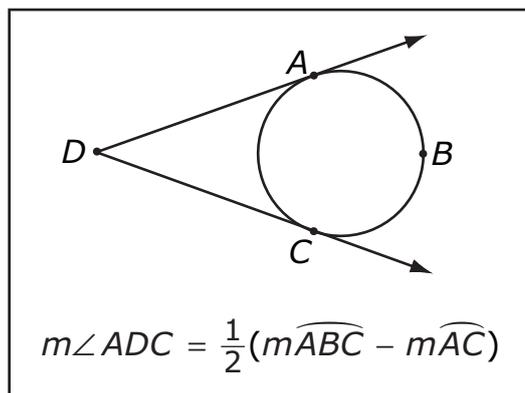
- F**  $1.5\pi\text{ cm}$   
**G**  $3.0\pi\text{ cm}$   
**H**  $21.0\pi\text{ cm}$   
**J**  $24.0\pi\text{ cm}$

# Section 1

13 The measure of  $\widehat{FH}$  is 70 degrees.

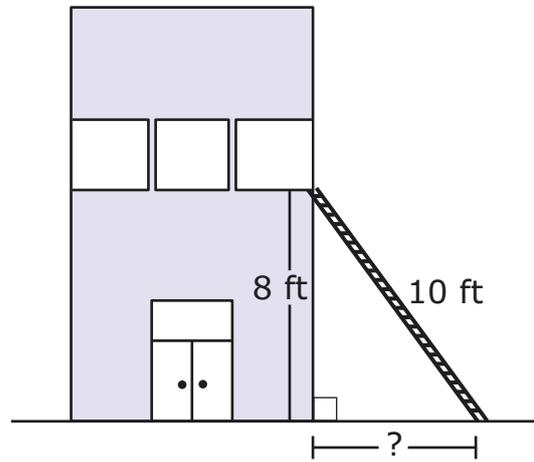


What is the measure of  $\angle FGH$ ?



- A  $110^\circ$
- B  $125^\circ$
- C  $140^\circ$
- D  $160^\circ$

- 14 Mr. Smith uses a ladder that is 10 feet long to reach the bottom of a window that is 8 feet above the ground.

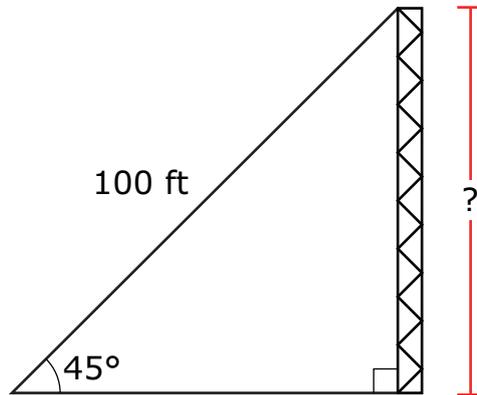


How far from the base of the wall is the bottom of the ladder?

- F 13 ft
- G 9 ft
- H 6 ft
- J 2 ft

## Section 1

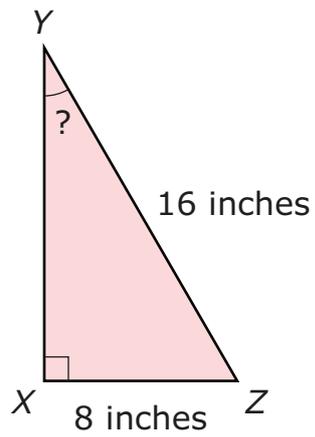
- 15 A 100-foot wire is attached to the top of an antenna and anchored to the ground.



To the nearest foot, what is the height of the antenna?

- A 58 ft
- B 71 ft
- C 141 ft
- D 173 ft

16

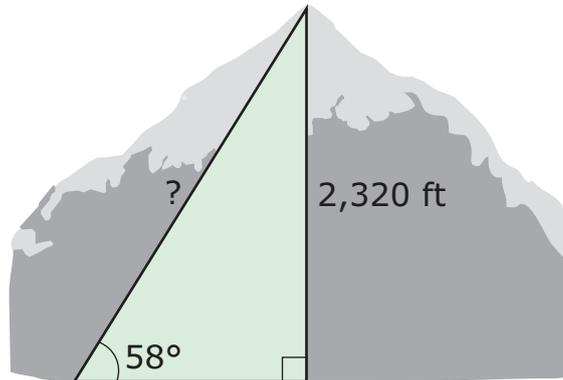


What is the measure in degrees of  $\angle XYZ$ ?

- F  $25^\circ$
- G  $30^\circ$
- H  $45^\circ$
- J  $60^\circ$

## Section 1

- 17 Rachel is standing at the base of a mountain. The angle of elevation to the top of the mountain is 58 degrees.

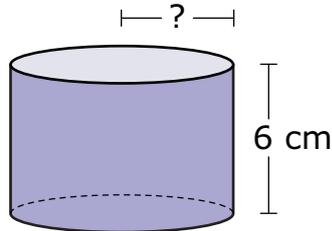


To the nearest hundred feet, what is the straight-line distance from Rachel to the top of the mountain?

$$\begin{aligned}\sin 58^\circ &\approx 0.85 \\ \cos 58^\circ &\approx 0.53 \\ \tan 58^\circ &\approx 1.60\end{aligned}$$

- A 2,700 ft
- B 3,700 ft
- C 4,000 ft
- D 4,400 ft

- 18 A cylindrical shaped bottle is filled with water. It has a volume of 169.56 cubic centimeters.



What is the measure of the radius of the base? (Use 3.14 for  $\pi$ .)

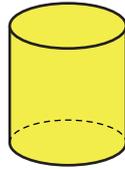
$$V = \pi r^2 h$$

- F 1.5 cm
- G 3.0 cm
- H 4.5 cm
- J 9.0 cm

- 19 Hannah has two congruent mini-basketballs. One ball has no air. The diameter of the other ball is 4 centimeters. To the nearest cubic centimeter, what is the volume of air needed to inflate the first ball? (Use 3.14 for  $\pi$ .)

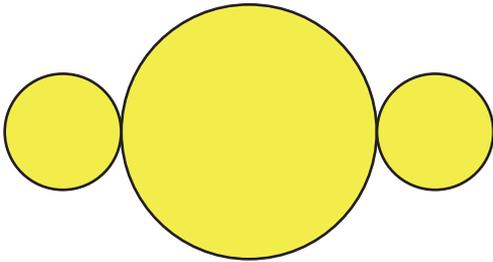
$$V = \frac{4}{3} \pi r^3$$

- A  $33 \text{ cm}^3$
- B  $50 \text{ cm}^3$
- C  $201 \text{ cm}^3$
- D  $268 \text{ cm}^3$

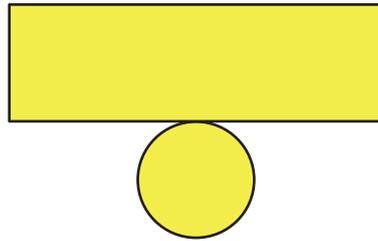


Which is a net of this cylinder?

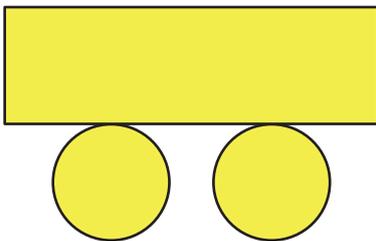
F



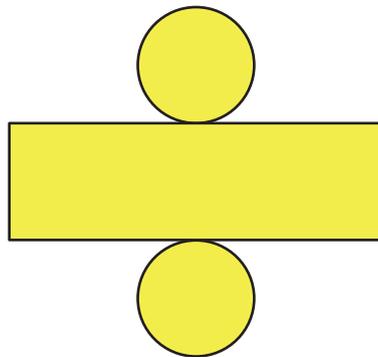
G



H

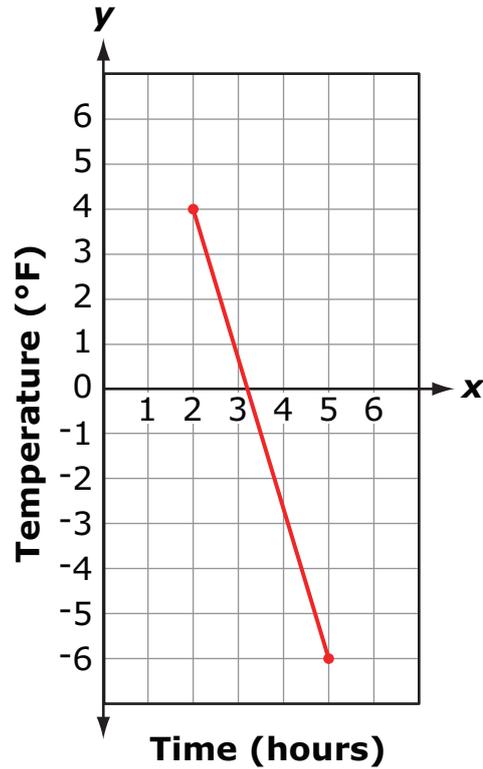


J



- 21 Linda recorded the air temperature at two different times. This information is recorded on the graph below. The two points are connected to form a line segment.

Linda's Temperature Recordings



What is the midpoint of this line segment?

Midpoint between two points

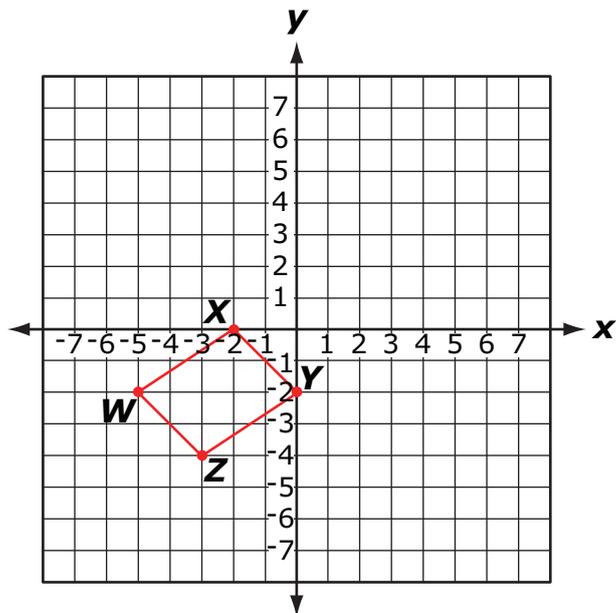
$P_1(x_1, y_1)$  and  $P_2(x_2, y_2)$ :

$$\left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

- A (1.5, -5)
- B (2.5, 2)
- C (3, 0.5)
- D (3.5, -1)

## Section 1

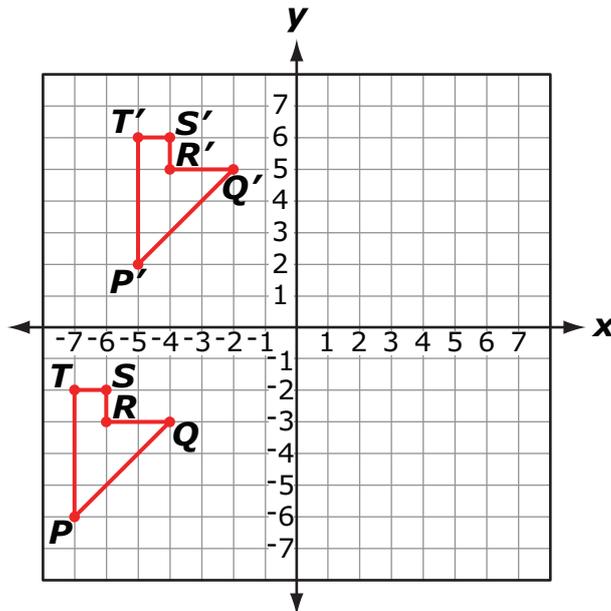
22



**What is the most specific name for figure WXYZ?**

- F** parallelogram
- G** rectangle
- H** trapezoid
- J** square

- 23 The diagram shows a translation of pentagon  $PQRST$  to pentagon  $P'Q'R'S'T'$ .



Which translation was used to create pentagon  $P'Q'R'S'T'$ ?

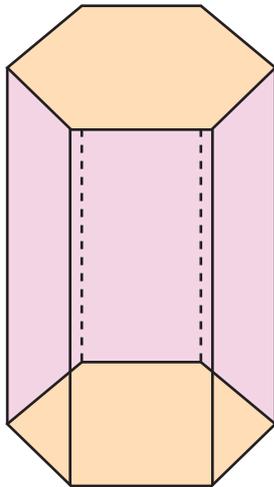
- A 2 units right and 8 units down
- B 8 units right and 2 units down
- C 8 units right and 2 units up
- D 2 units right and 8 units up

## Section 1

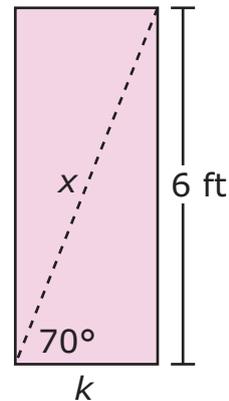
Use the information below to answer Numbers 24, 25, and 26.

Deanna ordered some display cases in the shape of regular hexagonal prisms for her store. After the display cases arrived, Deanna assembled them. Each display case consists of rectangular glass panels and hexagonal wooden panels.

Deanna's Display Case



Glass Panel



- 24** When Deanna assembled the first display case, she noticed that each long glass panel was taped along its diagonal to prevent the glass from breaking. Which equation can be used to find  $x$ , the length of each piece of tape?

**F**  $\sin 70^\circ = \frac{x}{6}$

**G**  $\cos 70^\circ = \frac{x}{6}$

**H**  $\sin 70^\circ = \frac{6}{x}$

**J**  $\cos 70^\circ = \frac{6}{x}$

**25** How many faces does each of Deanna's display cases have?

- A** 6 faces
- B** 8 faces
- C** 12 faces
- D** 18 faces

**26** As Deanna assembled the display cases, she wondered how much glass composed the six rectangular glass panels of each display case. Based on the diagrams, what is the total area in square feet of the glass panels of each display case if the width of each panel,  $k$ , is 2.2 feet?

- F** 36.0 square feet
- G** 66.0 square feet
- H** 79.2 square feet
- J** 105.6 square feet





**STOP**

**END OF SECTION 1**





