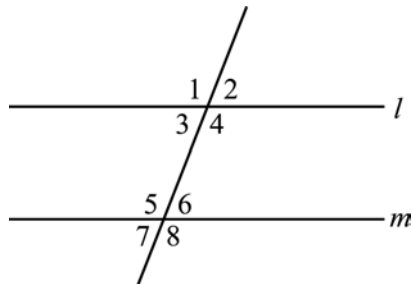


Geometry

- 1 A student thinks that the diagonals of any quadrilateral are always equal. Which quadrilateral can be used to show that the student is incorrect?
- A a 5-by-5 square
 - B a 5-by-8 rectangle
 - C an isosceles trapezoid with bases of 5 and 8
 - D a 5-by-5 rhombus that is not a square
- 2 Which statement is equivalent to “If point P is inside a circle, then point Q is NOT inside the circle”?
- A If point Q is inside a circle, then point P is NOT inside the circle.
 - B If point P is inside a circle, then point Q is inside the circle.
 - C If point P is NOT inside a circle, then point Q is inside the circle.
 - D If point Q is NOT inside a circle, then point P is inside the circle.
- 3 Points $A, B, C, D,$ and E lie on a line. Point B is between A and C , point D is between C and E , and point E is between A and B . Which of the following CANNOT be the position of D ?
- A between A and B
 - B between A and E
 - C between B and C
 - D between B and E
- 4 In the figure below, $l \parallel m$. Which of the following is a pair of alternate interior angles?



- A $\angle 1$ and $\angle 6$
- B $\angle 4$ and $\angle 5$
- C $\angle 7$ and $\angle 2$
- D $\angle 7$ and $\angle 6$

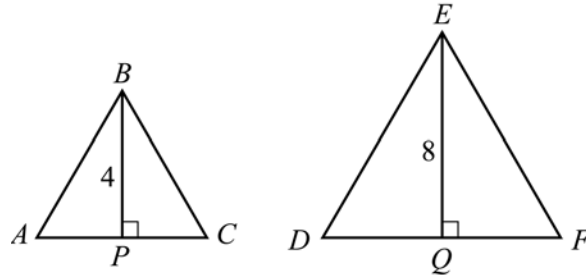
5 If two complementary angles are equal, which statement is also true?

- A Both angles are obtuse.
- B Both angles are adjacent.
- C Both angles are right angles.
- D Both angles have equal supplements.

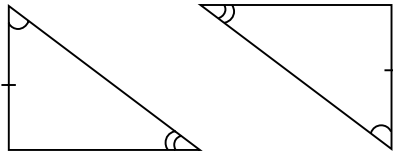
6 Paul is building a garage. What do the planes of the floor and the back wall of the garage most closely represent?

- A coplanar planes
- B intersecting planes
- C parallel planes
- D bisecting planes

- 7 In the figure below, $\triangle ABC$ is similar to $\triangle DEF$. What is the ratio of the area of $\triangle ABC$ to the area of $\triangle DEF$?

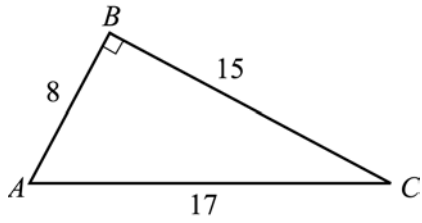


- A 1 to 8
B 1 to 4
C 1 to 2
D 1 to 1
- 8 Celeste drew 2 triangles and used tick marks to show that specific angles and sides were congruent. Given the places where she placed the marks, what reason can Celeste use to show that the triangles are congruent?



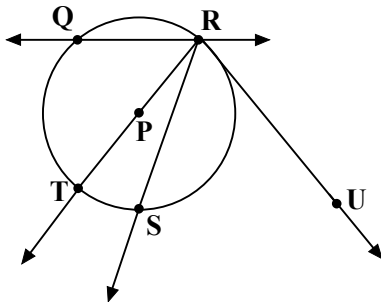
- A Angle–Angle–Angle (AAA)
B Angle–Side–Angle (ASA)
C Angle–Angle–Side (AAS)
D Side–Angle–Side (SAS)

9 In right triangle ABC below, what ratio represents $\sin C$?



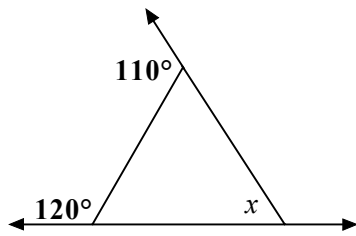
- A $\frac{8}{17}$
- B $\frac{8}{15}$
- C $\frac{15}{17}$
- D $\frac{17}{8}$

10 For the figure shown, what is the longest chord of the circle?



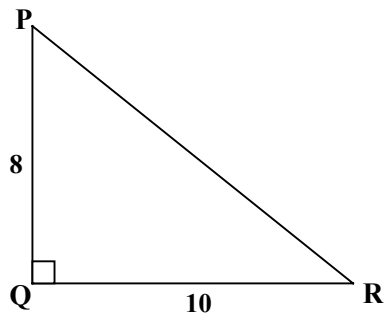
- A \overline{QR}
- B \overline{RS}
- C \overline{RT}
- D \overline{RU}

11 In the figure below, what is the measure of x ?



- A 130°
- B 70°
- C 60°
- D 50°

12 What is the measure of \overline{PR} ?

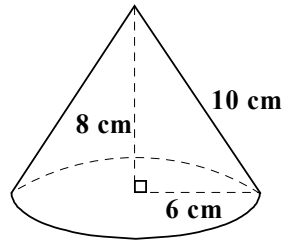


- A $\sqrt{6}$
- B $4\sqrt{7}$
- C $2\sqrt{41}$
- D $4\sqrt{41}$

13 What is the total surface area of a cube with edges of length 6 inches?

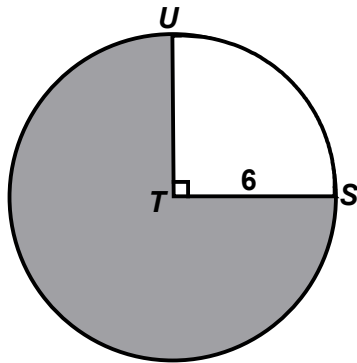
- A 36 cubic inches
- B 36 square inches
- C 216 cubic inches
- D 216 square inches

14 What is the volume of the right circular cone below?



- A $36\pi \text{ cm}^3$
- B $64\pi \text{ cm}^3$
- C $96\pi \text{ cm}^3$
- D $130\pi \text{ cm}^3$

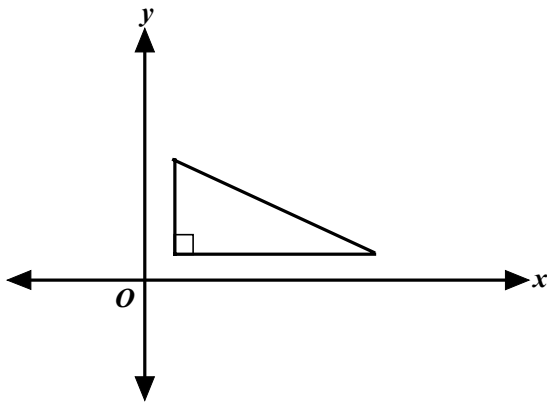
15 In this figure, T is the center of the circle.



What is the perimeter of the shaded region?

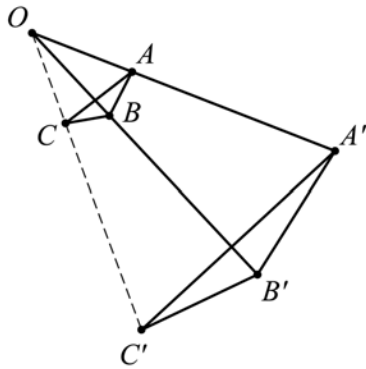
- A $9\pi + 12$
 - B $12\pi + 12$
 - C 24π
 - D $9\pi + 6$
- 16 When a plane and a sphere intersect at more than one point, how is the intersection BEST described?
- A a circle whose radius is greater than or equal to the radius of the sphere
 - B a circle whose radius is less than or equal to the radius of the sphere
 - C a hemisphere
 - D a semicircle

- 17 The triangle below is first to be reflected across the y -axis and then, this image is to be reflected across the x -axis.



The original triangle and the resulting image are symmetric with respect to

- A the origin
 - B the line $y = x$
 - C the line $y = 0$
 - D the line $y = -x$
- 18 The figure below shows a dilation of $\triangle ABC$ into $\triangle A'B'C'$. The center of the dilation is O , and the scale factor is 3.5. If the length of OA is 2 inches, what is the length of AA' ?



- A 1 inch
- B 4 inches
- C 5 inches
- D 6 inches

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