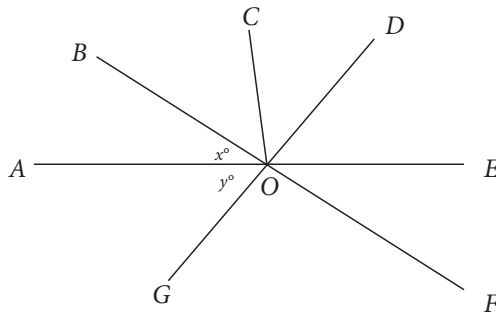


**TRY IT EXERCISE 1—ANGLES AND LINES**

After you try these questions, go to Chapter 20 to check your answers. Remember to leave that calculator alone on questions with no calculator symbol.

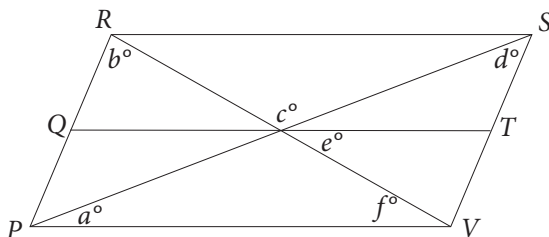
**3**

Note: Figure not drawn to scale.

In the figure above, lines  $AE$ ,  $BF$ , and  $DG$  all intersect at vertex  $O$ . If  $x + y = 70^\circ$  and if line  $CO$  bisects angle  $BOD$ , then what is the measure of angle  $BOC$ ?

- A)  $20^\circ$
- B)  $40^\circ$
- C)  $55^\circ$
- D)  $75^\circ$

4

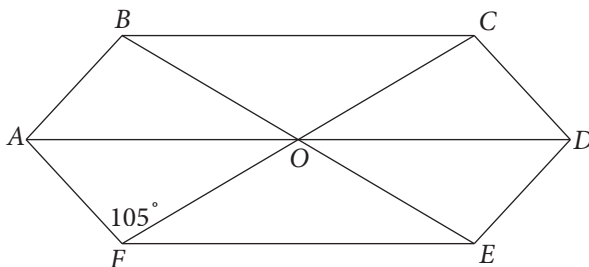


In the figure above,  $RS \parallel QT \parallel PV$ . Which of the following must equal  $180^\circ$ ?

- A)  $a + b + c$
- B)  $a + c + e$
- C)  $b + c + d$
- D)  $c + e + f$



6



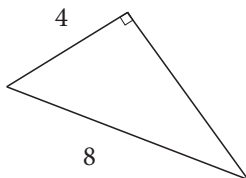
In the figure above,  $BC \parallel AD \parallel FE$ , and lines  $AD$ ,  $BE$ , and  $CF$  all intersect at point  $O$ . If  $BA \perp AF$ , and  $BE = CF$ , then what is the measure of  $\angle BOC$ ?

- A) 75
- B) 90
- C) 105
- D) 120

**TRY IT EXERCISE 2—TRIANGLES**

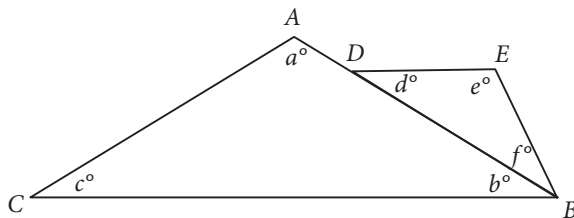
Work these questions, with or without your calculator as indicated, then check the answers in Chapter 20.

1



What is the area of the triangle above?

- A)  $8\sqrt{3}$
- B) 16
- C)  $16\sqrt{3}$
- D) 32



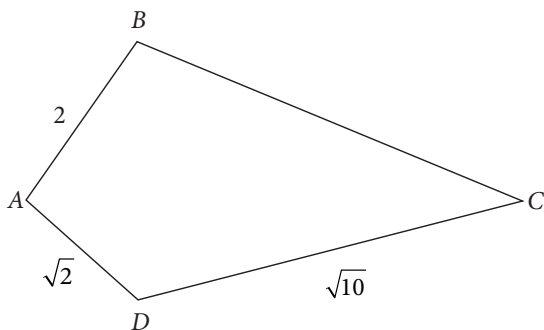
Note: Figure not drawn to scale.

In the figure above, point  $D$  is on side  $\overline{AB}$  of  $\triangle ABC$ .

If  $b = f = 30$ ,  $a = 100$ ,  $d = 50$ ,  $\overline{AD} = \frac{1}{3}\overline{AB}$ , and  $\overline{BE} = \frac{1}{2}\overline{AB}$ ,

which of the following is equal to  $\overline{BC}$ ?

- A)  $2\overline{AD}$
- B)  $2\overline{AB}$
- C)  $4\overline{AD}$
- D)  $\overline{AB}\sqrt{2}$



In the figure above, line segments  $AC$  and  $BD$  are perpendicular and intersect at point  $O$  (not shown). If  $AO = DO$ , then what is the ratio of the area of triangle  $ACD$  to the area of triangle  $ABC$  ?

- A) 1 to  $\sqrt{3}$
- B) 1 to 2
- C) 1 to 3
- D)  $\sqrt{3}$  to 1

## TRY IT EXERCISE 3—RIGHT TRIANGLE TRIGONOMETRY

After you try these questions, go to Chapter 20 to check your answers. Remember to leave that calculator alone on questions with no calculator symbol.



11

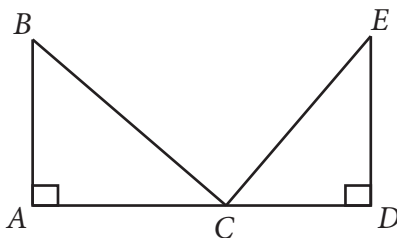
In right triangle  $ABC$  (not shown), if  $\sin CAB = \frac{7}{25}$ , and the

perimeter of triangle  $ABC$  is 14, which of the following is

closest to the length of  $BC$  ?

- A) 1.75
- B) 6
- C) 6.25
- D) 7

12



In the triangles shown above, if  $BC \perp CE$ , which of the following statements must be true?

- A)  $AC = ED$
- B)  $\frac{AB}{AC} = \frac{DE}{CD}$
- C)  $\frac{AB}{BC} = \frac{CD}{CE}$
- D)  $\frac{BC}{AC} = \frac{CE}{CD}$



15

Sam is standing at the edge of the roof of a building looking straight ahead. He then directs his gaze downward  $63^\circ$  and sees a pothole 10 meters from the base of the building. If Sam's eye level is 1.2 meters above the rooftop, which of the following is closest to the height of the building?

- A) 5.13 meters
- B) 18.43 meters
- C) 19.63 meters
- D) 20.83 meters

## TRY IT EXERCISE 4—CIRCLES

Work these questions, either with or without your calculator as you see fit, then check the answers in Chapter 20.



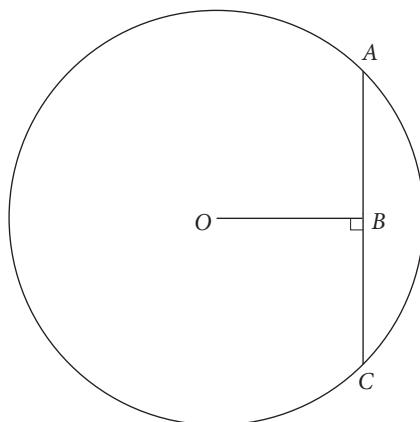
7

A homeowner is buying a circular rug for a square room that has an area of 144 square feet. If the homeowner wants the rug to be centered in the room with 1 foot of space between the edge of the rug and any wall, which of the following is closest to the largest possible area of the circular rug, in square feet?

- A) 25
- B) 80
- C) 100
- D) 115



15



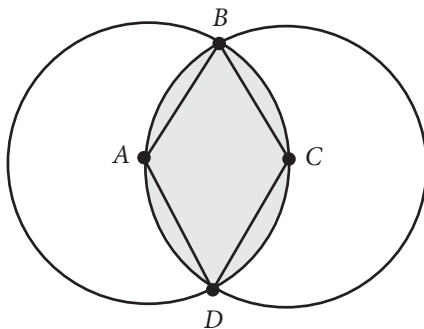
In the figure above,  $A$  and  $C$  are points on the circumference of circle  $O$ . If the area of the circle is  $64\pi$  and the measure of minor arc  $AC$  is  $4\pi$ , then what is the length of line segment  $BO$ ?

- A) 4
- B)  $4\sqrt{2}$
- C) 8
- D)  $8\sqrt{2}$





19



In the figure above,  $A$  and  $C$  are the centers of the circles and  $B$  and  $D$  are the points of intersection. If the perimeter of the shaded region is  $40^\circ$ , what is the perimeter of quadrilateral  $ABCD$ ?

- A) 40
- B) 60
- C) 80
- D) 120

## TRY IT EXERCISE 5—CIRCLE TRIGONOMETRY

After you try these questions, go to Chapter 20 to check your answers. Remember to leave that calculator alone on questions with no calculator symbol.

6

Points  $A$  and  $C$  are two points on a circle with center  $O$ . If the circle has a circumference of  $16\pi$  and the radian measure of angle  $AOC$  is  $\frac{5\pi}{4}$ , what is the length of minor arc  $AC$ ?

- A)  $4\pi$
- B)  $5\pi$
- C)  $10\pi$
- D)  $12\pi$



21

Given that  $\frac{7\pi}{6} < x < \frac{5\pi}{3}$ , where  $x$  is in radians, which of the following could be the value of  $\sin x$ ?

- A)  $-\frac{\sqrt{3}}{2}$
- B)  $\frac{-1}{2}$
- C)  $\frac{1}{2}$
- D)  $\frac{\sqrt{3}}{2}$



28

If  $\tan \theta$  is  $\frac{1}{\sqrt{3}}$  and  $\theta$  is in radians, which of the following could be the value of  $\theta + \frac{\pi}{2}$ ?

- A)  $\frac{-\pi}{6}$
- B)  $\frac{5\pi}{4}$
- C)  $\frac{7\pi}{6}$
- D)  $\frac{5\pi}{3}$

**TRY IT EXERCISE 6—THREE DIMENSIONAL FIGURES**

Work these questions, either with or without your calculator as indicated, then check the answers in Chapter 20. Don't forget to look at the reference box to find the formula you need, even if you think you know it already.

**13**

A right circular cone and a right circular cylinder have equal heights and the volume of the cylinder is twice that of the cone. What is the radius of the cylinder if the base radius of the cone is 3 cm and the volume of the cone is  $18\pi \text{ cm}^3$ ?

- A)  $\sqrt{2}$
- B) 2
- C)  $2\sqrt{3}$
- D)  $\sqrt{6}$

**26**

A cube with a volume of 64 cubic inches is inscribed in a sphere so that all vertices of the cube touch the sphere. What is the volume, in cubic inches, of the sphere?

- A)  $16\pi\sqrt{3}$
- B)  $32\pi\sqrt{3}$
- C)  $64\pi\sqrt{3}$
- D)  $128\pi\sqrt{3}$

17

The radius of right circular cylinder  $A$  is half of that of right circular cylinder  $B$ . Cylinder  $A$  has a volume of  $100\pi$  cubic centimeters and a height of 4 centimeters. If the volume of cylinder  $B$  is  $200\pi$  cubic centimeters, what is the height of cylinder  $B$ ?

	7	7	
	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

## BALLPARKING AND GEOMETRY

Ballparking is also a great technique on Geometry questions. Most of the time, the figures College Board provides are drawn to scale. (The exceptions are when the question says, “Note: Figure not drawn to scale” under the figure.) When the figure is drawn to scale, you can Ballpark to eliminate answers that don’t fit with the figure, and sometimes narrow the answers down to just one without a ton of extra work.