CHAPTER 28
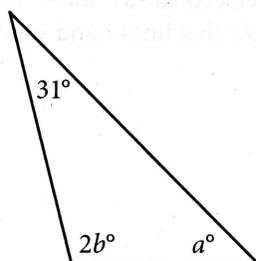
Math: Questions— Geometry and Trigonometry Drills

1

In the triangle shown, $a = 45$. What is the value of b?

A) 52

B) 59

C) 76

D) 104

2

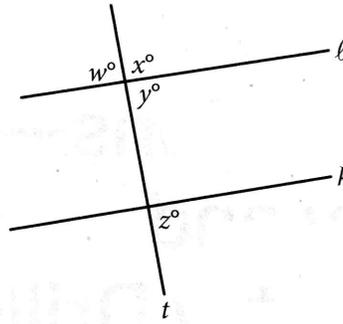A cube has a surface area of 54 square meters. What is the volume, in cubic meters, of the cube?

A) 18

B) 27

C) 36

D) 81

3

In the xy-plane, a circle with radius 5 has center $(-8, 6)$. Which of the following is an equation of the circle?

A) $(x - 8)^2 + (y + 6)^2 = 25$

B) $(x + 8)^2 + (y - 6)^2 = 25$

C) $(x - 8)^2 + (y + 6)^2 = 5$

D) $(x + 8)^2 + (y - 6)^2 = 5$

4

Note: Figure not drawn to scale.

In the figure shown, line t intersects lines ℓ and k. Which of the following statements, if true, would imply that lines ℓ and k are parallel?
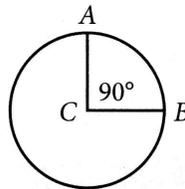
A) $w = y$

B) $w = z$

C) $x = z$

D) $x + y = 180$

5

In a right triangle, the tangent of one of the two acute angles is $\frac{\sqrt{3}}{3}$. What is the tangent of the other acute angle?

A) $-\frac{\sqrt{3}}{3}$

B) $-\frac{3}{\sqrt{3}}$

C) $\frac{\sqrt{3}}{3}$

D) $\frac{3}{\sqrt{3}}$

6

Point C is the center of the circle shown. What is the measure of angle ACB, in radians?

A) 2π
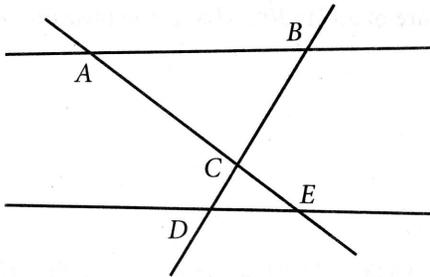
B) π

C) $\frac{\pi}{2}$

D) $\frac{\pi}{4}$

7

The length of one side of square M is 5 times the length of one side of square N. The area of square N is 361 square centimeters. What is the area, in square centimeters, of square M?

8

Triangle *KLM* is similar to triangle *QRS*, where angle *K* corresponds to angle *Q* and where angles *L* and *R* are right angles. If $\sin K = \frac{105}{233}$ and $\sin M = \frac{208}{233}$, what is the value of $\tan S$?
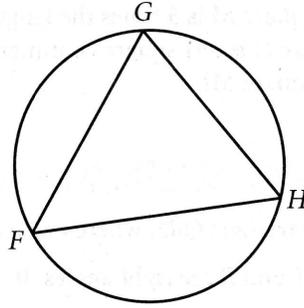
9

Note: Figure not drawn to scale.

In the figure shown, $\triangle ABC$ is similar to $\triangle EDC$, with $\angle BAC$ corresponding to $\angle CED$ and $\angle ABC$ corresponding to $\angle CDE$. Which of the following must be true?

A) $\overline{AE} \parallel \overline{BD}$

B) $\overline{AE} \perp \overline{BD}$

C) $\overline{AB} \parallel \overline{DE}$
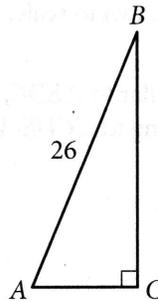
D) $\overline{AB} \perp \overline{DE}$

Note: Figure not drawn to scale.

Triangle *FGH* is inscribed in the circle shown. If arc *FG* is congruent to arc *GH* and the measure of $\angle G$ is 30°, what is the measure of $\angle H$?

A) 30°

B) 60°

C) 75°

D) 120°
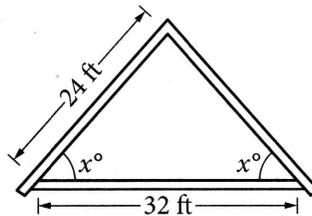
Triangle *ABC* shown is a right triangle, and $\sin B = \frac{5}{13}$. What is the length of side $\overline{BC}$?

An architect drew the sketch shown while designing a house roof. The dimensions shown are for the interior of the triangle.

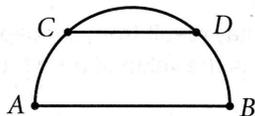Note: Figure not drawn to scale.

What is the value of cos *x*?

Line ℓ is parallel to line m. Points A and B lie on line ℓ, and points P and Q lie on line m. If $\angle ABP$ and $\angle QAB$ each have measure $21°$ and $\angle AQB$ has measure $76°$, what is the measure, in degrees, of $\angle PAQ$?

The semicircle shown has a radius of r inches, and chord $\overline{CD}$ is parallel to the diameter $\overline{AB}$. If the length of $\overline{CD}$ is $\frac{2}{3}$ of the length of $\overline{AB}$, what is the distance between the chord and the diameter in terms of r?

A) $\frac{1}{3}\pi r$

B) $\frac{2}{3}\pi r$

C) $\frac{\sqrt{2}}{2}r$

D) $\frac{\sqrt{5}}{3}r$

GEOMETRY AND TRIGONOMETRY DRILL ANSWERS

1. A
2. B
3. B
4. B
5. D
6. C
7. 9,025

8. 1,981
9. C
10. C
11. 24
12. $\frac{2}{3}$
13. 62
14. D

Answer explanations can be found in the *SAT Official Guide* on pages 300 to 303.