Math

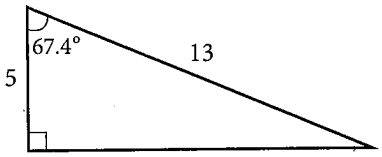
Try on Your Own

Directions

Take as much time as you need on these questions. Work carefully and methodically. There will be an opportunity for timed practice later in the book.

1

HINT: Pythagorean triples frequently appear in trig questions. What is the triangle's missing side length in Q1?



Based on the figure, which of the following is true?

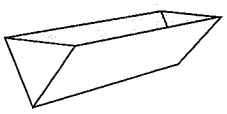
Ⓐ $\sin 22.6° = \frac{5}{12}$

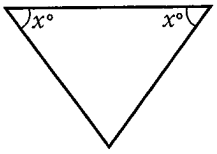
Ⓑ $\sin 67.4° = \frac{5}{13}$

Ⓒ $\cos 22.6° = \frac{12}{13}$

Ⓓ $\cos 67.4° = \frac{5}{12}$

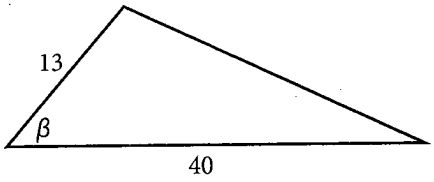
2





The triangle shown is a cross-section of a feeding trough. The triangular cross-section is 24 inches deep and 36 inches across the top. If $\cos x = B$, what is the value of B?

3

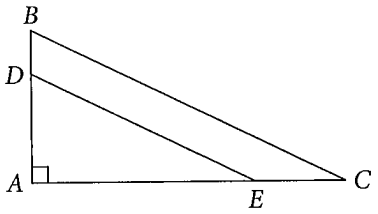


Note: Figure not drawn to scale.

If the area of the triangle shown is 240 square inches, what is $\tan \beta$?

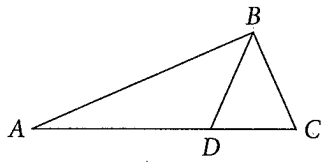
4

HINT: For Q4, what do you know about triangles with a shared angle and parallel sides?



In the figure, DE is parallel to BC and $\sin \angle C = 0.6$. Side $AC = 16$ and side $BD = 3$. What is the length of side AE?

5



If $\sin \angle A = \cos \angle C$, what is $\sin \angle ABD - \cos \angle DBC$?

Ⓐ 0

Ⓑ $\frac{1}{2}$

Ⓒ 1

Ⓓ The result of the subtraction cannot be determined without additional information.

Math

How Much Have You Learned: Geometry and Trigonometry

Directions

This "How Much Have You Learned?" section will allow you to measure your growth and confidence in Geometry and Trigonometry skills.

For testlike practice, give yourself 15 minutes for this question set. Be sure to use the Method for SAT Math Questions. When you're done, check your answers and read through the explanations, even for the questions you got correct. Don't forget to celebrate your progress!

1

The base, b, of a right triangle is $\frac{2}{3}$ the height, h, of the triangle. Which of the following is the length of the hypotenuse in terms of h?

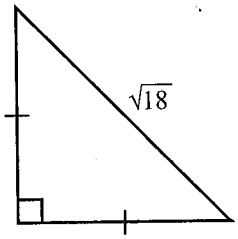
Ⓐ $\sqrt{\frac{5}{3}}h$

Ⓑ $\frac{\sqrt{13}}{3}h$

Ⓒ $\sqrt{\frac{5}{6}}h$

Ⓓ $\frac{\sqrt{13}}{18}h$

2



What is the length of each leg in the figure shown?

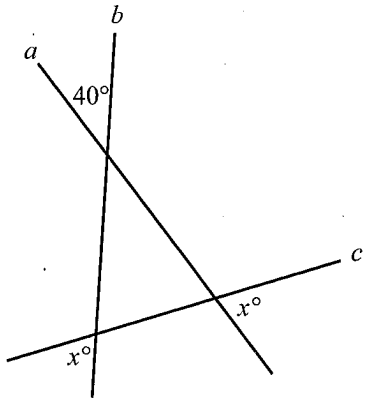
Ⓐ 3

Ⓑ $3\sqrt{2}$

Ⓒ $3\sqrt{3}$

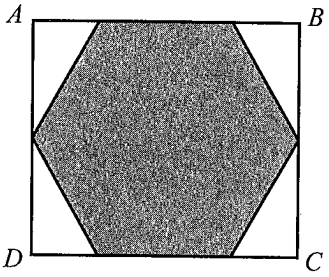
Ⓓ 9

3



In the figure shown, what is the value of x?

4



In the figure shown, the shaded region is a regular hexagon inscribed in rectangle *ABCD*. If each side length of the hexagon is 2 units, what is the area of rectangle *ABCD* in square units?

Ⓐ $4 + 4\sqrt{3}$

Ⓑ 12

Ⓒ $8\sqrt{3}$

Ⓓ $8 + 4\sqrt{3}$

5

Triangle *PQR* has angles measuring 23° and 48°. Which of the following could be the measure of an angle in a triangle similar to *PQR*?

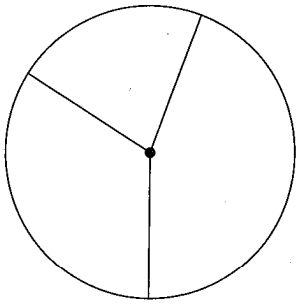
Ⓐ 24°

Ⓑ 69°

Ⓒ 96°

Ⓓ 109°

6



If the central angles in the circle shown are in the ratio 4:3:2, what is the measure, in degrees, of the smallest angle?

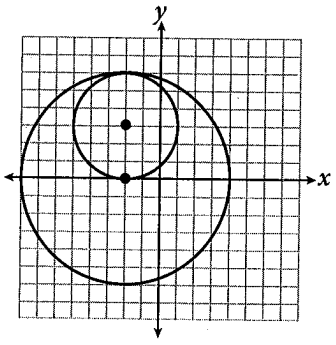
Ⓐ 40

Ⓑ 60

Ⓒ 72

Ⓓ 80

7



If the area of the smaller circle shown is 144π square units, what is the equation of the larger circle?

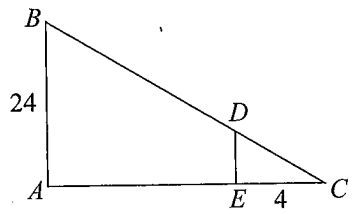
Ⓐ $(x + 2)^2 + y^2 = 36$

Ⓑ $(x + 2)^2 + (y - 3)^2 = 9$

Ⓒ $(x + 8)^2 + (y - 12)^2 = 144$

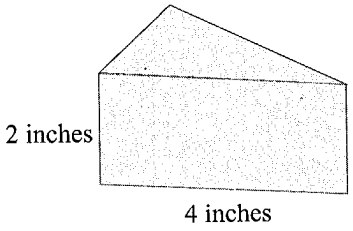
Ⓓ $(x + 8)^2 + y^2 = 576$

8



In the figure shown, $\overline{DE} \parallel \overline{AB}$ and $\overline{DE} \perp \overline{AC}$. If $AE = 28$, what is the length of DE?

9



A piece of cheese in the shape of a triangular prism, consisting of 2 triangles, 2 rectangles and 1 square, as shown in the figure is coated with a layer of wax. If 2 grams of wax covers 1 square inch, how many grams will it take to coat the piece of cheese?

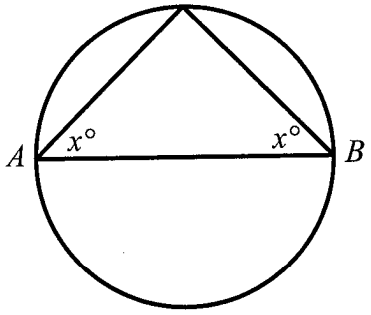
Ⓐ $20 + 2\sqrt{15}$

Ⓑ 28

Ⓒ $40 + 2\sqrt{15}$

Ⓓ $40 + 4\sqrt{15}$

10



In the figure shown, AB is the diameter of the circle. What is $\cos x$?

Ⓐ $\frac{1}{2}$

Ⓑ $\frac{1}{\sqrt{2}}$

Ⓒ $\frac{\sqrt{3}}{2}$

Ⓓ 1