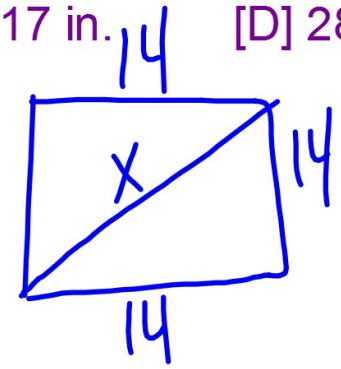
1. The bottom of a fish tank is a square with edges 14 inches long. What is the distance between opposite corners of the bottom of the fish tank? Answers have been rounded to the nearest inch.

[A] 20 in. [B] 14 in. [C] 17 in. [D] 28 in.



2. Use the Pythagorean Theorem to determine which three numbers could represent the sides of a right triangle.

[A] 64, 72, 98 [B] 65, 72, 97 [C] 65, 71, 97 [D] 64, 72, 96

3. Write $\sqrt{28}$ in simplest radical form.

[A] $4\sqrt{7}$ 4 7 [B] 14 [C] $2\sqrt{7}$ [D] 5.29

The numbers below represent the lengths of the sides of a triangle. Classify each triangle as acute, right, or obtuse.

4. 12, 13, 18 $18^2 > 12^2 + 13^2$

Obtuse

5. 20, 21, 29

right

Simplify each square root using simplest radical form—no decimals!

6. $\sqrt{60}$

$4 \cdot 15$

$2\sqrt{15}$

7. $\sqrt{18}$

$9 \cdot 2$

$3\sqrt{2}$

8. $\sqrt{75}$

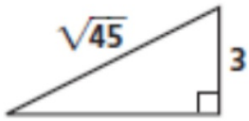
$25 \cdot 3$

$5\sqrt{3}$

Find the missing side of the right triangle using the Pythagorean Theorem. If your answers are not whole numbers, write them in simplest radical form.

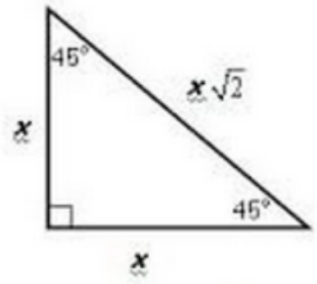
9. $x =$ 6

$(\sqrt{45})^2 = b^2 + 9$

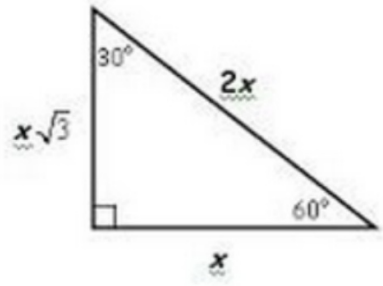


b

Find the missing side of each special right triangle. All answers should be in simplest radical form. Be sure to rationalize the denominator if needed. I have provided the general form of each triangle for you below.

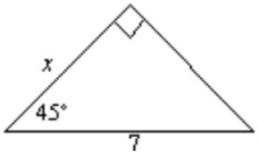


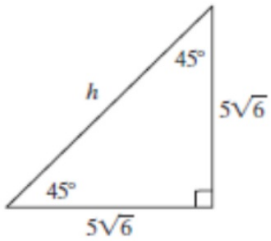
10. $x =$ $\frac{7\sqrt{2}}{2}$
$y =$ _____



11. $x =$ $10\sqrt{3}$
$y =$ _____

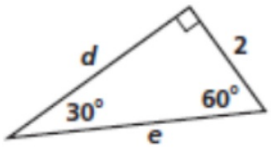
$5\sqrt{6}\cdot\sqrt{2}$
$5\sqrt{12}$
3.4



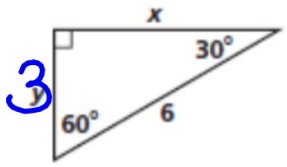


12. $x =$ ~~$12\sqrt{3}$~~
$y =$ _____

13. ~~$q = 2\sqrt{3}$~~
$r =$ 4



14. $x =$ $3\sqrt{3}$
$y =$ 3



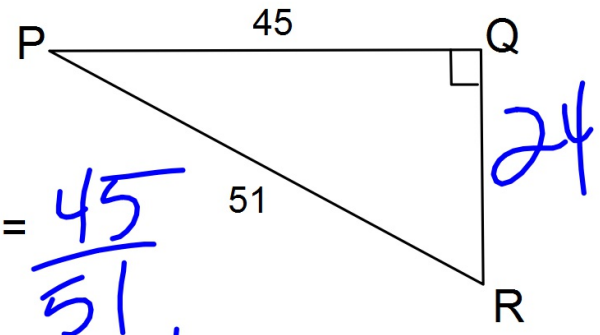
Section 8-4: Sine and Cosine Ratios

SOHCAHTOA

$$\text{Sin}A = \frac{\text{leg opposite } \angle A}{\text{hypotenuse}}$$

$$\text{Cos}A = \frac{\text{leg adjacent to } \angle A}{\text{hypotenuse}}$$

Find each as a ratio.



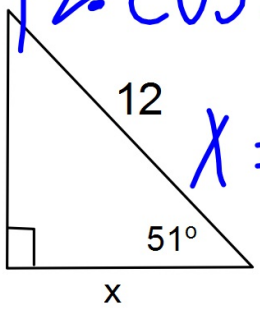
Sin P = $\frac{24}{51}$ Cos P = $\frac{45}{51}$

Sin R = $\frac{45}{51}$ Cos R = $\frac{24}{51}$

Why don't we write the SinQ and CosQ as ratios?

Find the value of x in each triangle to the nearest tenth.

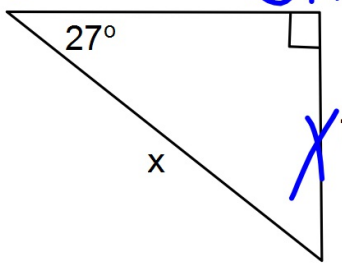
1.



$12 \cdot \cos 51 = \frac{x}{12} \cdot 12$

$x = 7.6$

2.

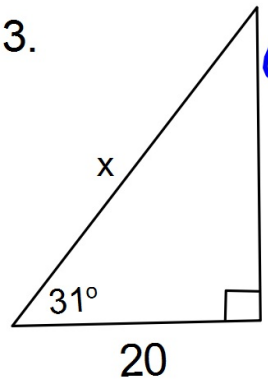


$\sin 27 = \frac{16}{x}$

$x = \frac{16}{\sin 27} = 35.2$

Find the value of x in each triangle to the nearest tenth.

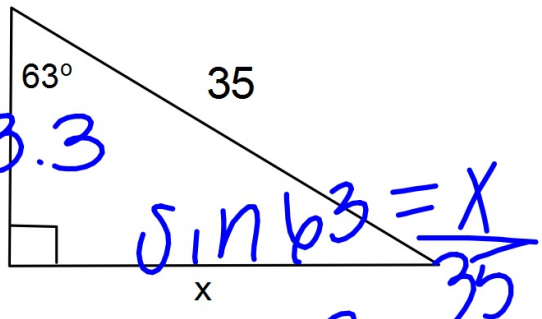
3.



$\cos 31 = \frac{20}{x}$

$x = \frac{20}{\cos 31} = 23.3$

4.

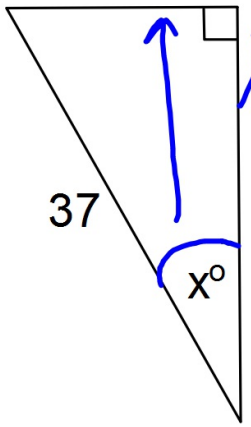


$\sin 63 = \frac{x}{35}$

$x = 31.2$

Find the value of x to the nearest hundredth.

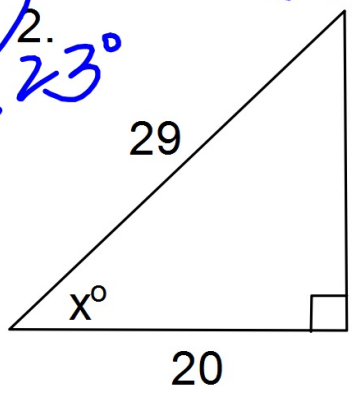
1.



$x = \sin^{-1}\left(\frac{14}{37}\right)$

$x = 22.23°$

2.



$\cos^{-1}(20/29)$

$x = 46.4°$