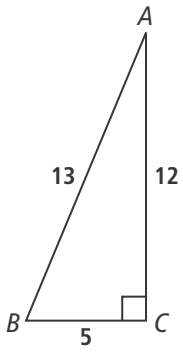
7-1 Additional Practice

Trigonometric Functions and Acute Angles

For Items 1 and 2, use $\triangle ABC$.



1. Write the six trigonometric ratios for $\angle A$.

$\sin A =$ _____ $\cos A =$ _____ $\tan A =$ _____

$\csc A =$ _____ $\sec A =$ _____ $\cot A =$ _____

2. Write the six trigonometric ratios for $\angle B$.

$\sin B =$ _____ $\cos B =$ _____ $\tan B =$ _____

$\csc B =$ _____ $\sec B =$ _____ $\cot B =$ _____

3. What are the trigonometric ratios of θ in a right triangle with the given value $\tan A = \frac{9}{40}$?

$\sin \theta =$ _____ $\cos \theta =$ _____ $\tan \theta =$ _____

$\csc \theta =$ _____ $\sec \theta =$ _____ $\cot \theta =$ _____

4. A kite has a string that is 300 ft long. The flying kite forms a 62° angle with a horizontal line running parallel to the ground. The bottom end of the string is 6 ft off the ground. How high is the kite? Round your answer to the nearest tenth.

Find each length.

5. the length of the hypotenuse of a 45°-45°-90° triangle with a leg of 12

6. the length of the longer leg of a 30°-60°-90° triangle with a hypotenuse of 14, when $\theta = 60°$

What is the cofunction identity for the given trigonometric ratio?

7. $\sin \theta =$ _____ **8.** $\sec \theta =$ _____ **9.** $\tan \theta =$ _____

10. Given the value of the hypotenuse c for a 30°-60°-90° triangle, write the equations to represent sides a and b in terms of c. Assume a is the shorter leg.

11. Given the value of the hypotenuse c for a 45°-45°-90° triangle, write the equations to represent sides a and b in terms of c.

7-1 Additional Practice

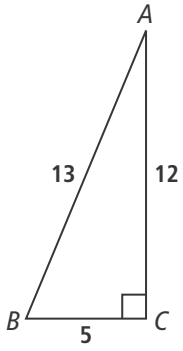
Trigonometric Functions and Acute Angles

For Items 1 and 2, use $\triangle ABC$.

1. Write the six trigonometric ratios for $\angle A$.

$\sin A = \frac{5}{13}$ $\cos A = \frac{12}{13}$ $\tan A = \frac{5}{12}$

$\csc A = \frac{13}{5}$ $\sec A = \frac{13}{12}$ $\cot A = \frac{12}{5}$



2. Write the six trigonometric ratios for $\angle B$.

$\sin B = \frac{12}{13}$ $\cos B = \frac{5}{13}$ $\tan B = \frac{12}{5}$

$\csc B = \frac{13}{12}$ $\sec B = \frac{13}{5}$ $\cot B = \frac{5}{12}$

3. What are the trigonometric ratios of θ in a right triangle with the given value $\tan A = \frac{9}{40}$?

$\sin \theta = \frac{9}{41}$ $\cos \theta = \frac{40}{41}$ $\tan \theta = \frac{9}{40}$

$\csc \theta = \frac{41}{9}$ $\sec \theta = \frac{41}{40}$ $\cot \theta = \frac{40}{9}$

4. A kite has a string that is 300 ft long. The flying kite forms a 62° angle with a horizontal line running parallel to the ground. The bottom end of the string is 6 ft off the ground. How high is the kite? Round your answer to the nearest tenth. **270.9 ft**

Find each length.

5. the length of the hypotenuse of a 45°-45°-90° triangle with a leg of 12 $12\sqrt{2}$

6. the length of the longer leg of a 30°-60°-90° triangle with a hypotenuse of 14, when $\theta = 60°$ $7\sqrt{3}$

What is the cofunction identity for the given trigonometric ratio?

7. $\sin \theta =$ $\cos(90° - \theta)$ **8.** $\sec \theta =$ $\csc(90° - \theta)$ **9.** $\tan \theta =$ $\cot(90° - \theta)$

10. Given the value of the hypotenuse c for a 30°-60°-90° triangle, write the equations to represent sides a and b in terms of c. Assume a is the shorter leg.

$a = \frac{c}{2}, b = \frac{c}{2}\sqrt{3}$

11. Given the value of the hypotenuse c for a 45°-45°-90° triangle, write the equations to represent sides a and b in terms of c.

$a = \frac{c}{\sqrt{2}}, b = \frac{c}{\sqrt{2}}$