Practice Worksheet: Right Triangle Trigonometry

Find the exact value of the trig ratio for θ. Simplify all radicals and rationalize denominators if needed.

1. Find \( \cos \theta \).
2. Find \( \sin \theta \).
3. Find \( \tan \theta \).

Label the sketch and solve right \( \triangle ABC \) using the given info. Round answers to two decimals.

4. \( m\angle A = 39^\circ \)  \( a = \)  \( m\angle B = \)  \( b = \)  \( m\angle C = \)  \( c = \sqrt{17} \)

Triangle Sum Thm. to find missing angle:

Trig ratio to find missing side:

Pythagorean Thm. to find last side:

5. \( m\angle A = \)  \( a = 6 \)  \( m\angle B = 28^\circ \)  \( b = \)  \( m\angle C = \)  \( c = \)

Triangle Sum Thm. to find missing angle:

Trig ratio to find missing side:

Pythagorean Thm. to find last side:

6. \( m\angle A = \)  \( a = 2 \)  \( m\angle B = \)  \( b = \)  \( m\angle C = \)  \( c = 6 \)

Pythagorean Thm. to find last side:

Inverse trig function to find missing angle:

Triangle Sum Thm. to find missing angle:
Label the sketch with the given information. Use your sketch to write ONE equation to find the missing value indicated. Solve that equation, showing all work. Round to two decimal places where needed.

7. Given $\angle A = 27^\circ$, and $b = 1$, find $c$.

8. Given $b = 8$ and $c = 10$, find $\angle B$.

9. Given $\angle B = 60^\circ$, and $c = 11$, find $a$.

10. Given $a = 4$ and $b = 13$, find $\angle A$.

11. Given $a = 7$ and $c = 25$, find $\angle B$.

12. Given $\angle A = 50^\circ$, and $b = 5$, find $a$.

13. Given $\angle A = 47^\circ$, and $c = 3$, find $a$.

14. Given $\angle B = 57^\circ$, and $b = 10$, find $c$.

15. A ladder leaning against a house makes an angle of $30^\circ$ with the ground. The foot of the ladder is 7 feet from the foot of the house. How long is the ladder? Show all work and label the sketch.

16. Find the length across the suspension bridge. Show all work.