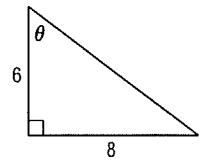
NAME _____ DATE _____ PERIOD _____

13-1 Skills Practice

Right Triangle Trigonometry

Find the values of the six trigonometric functions for angle θ.

1.



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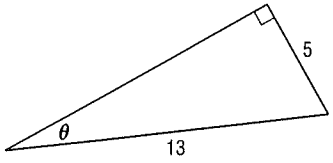

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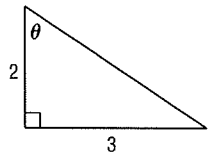
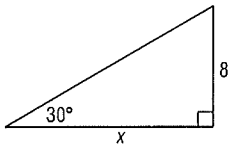


Write an equation involving sin, cos, or tan that can be used to find x. Then solve the equation. Round measures of sides to the nearest tenth and measures of angles to the nearest degree.

4.



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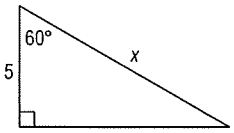

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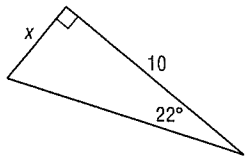

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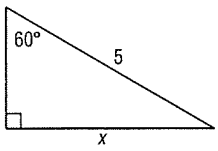

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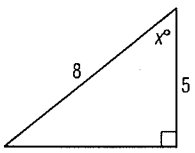

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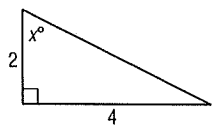
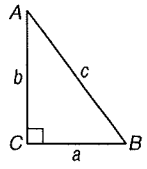


Solve $\triangle ABC$ by using the given measurements. Round measures of sides to the nearest tenth and measures of angles to the nearest degree.



10. $A = 72°, c = 10$

11. $B = 20°, b = 15$

12. $A = 80°, a = 9$

13. $A = 58°, b = 12$

14. $b = 4, c = 9$

15. $a = 7, b = 5$

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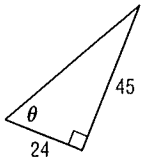
NAME _____ DATE _____ PERIOD _____

13-1 Practice

Right Triangle Trigonometry

Find the values of the six trigonometric functions for angle θ.

1.



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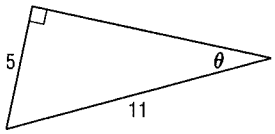

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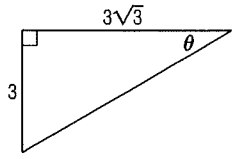
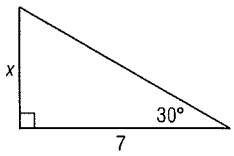


Write an equation involving sin, cos, or tan that can be used to find x. Then solve the equation. Round measures of sides to the nearest tenth and measures of angles to the nearest degree.

4.



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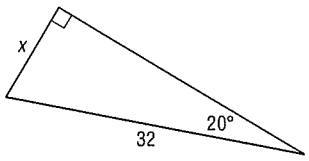

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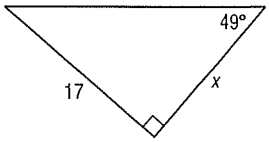

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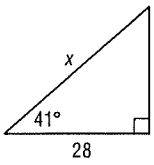

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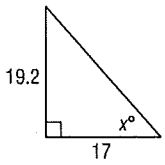

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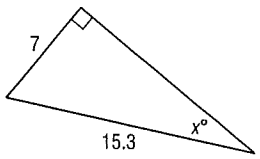

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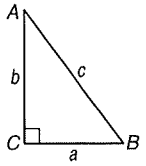

10. $A = 35°, a = 12$

11. $B = 71°, b = 25$

12. $B = 36°, c = 8$

13. $a = 4, b = 7$

14. $A = 17°, c = 3.2$

15. $b = 52, c = 95$

16. SURVEYING John stands 150 meters from a water tower and sights the top at an angle of elevation of 36°. How tall is the tower? Round to the nearest meter.

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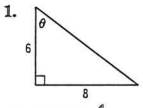
NAME Key DATE PERIOD

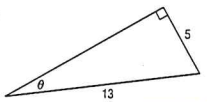
13-1 Skills Practice

Right Triangle Trigonometry

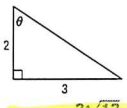
Find the values of the six trigonometric functions for angle θ.

1. 

$\sin\theta = \frac{4}{5}$, $\cos\theta = \frac{3}{5}$, $\tan\theta = \frac{4}{3}$, $\csc\theta = \frac{5}{4}$, $\sec\theta = \frac{5}{3}$, $\cot\theta = \frac{3}{4}$

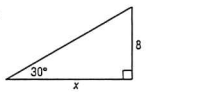
2. 

$\sin\theta = \frac{5}{13}$, $\cos\theta = \frac{12}{13}$, $\tan\theta = \frac{5}{12}$, $\csc\theta = \frac{13}{5}$, $\sec\theta = \frac{13}{12}$, $\cot\theta = \frac{12}{5}$

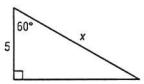
3. 

$\sin\theta = \frac{3\sqrt{13}}{13}$, $\cos\theta = \frac{2\sqrt{13}}{13}$, $\tan\theta = \frac{3}{2}$, $\csc\theta = \frac{\sqrt{13}}{3}$, $\sec\theta = \frac{\sqrt{13}}{2}$, $\cot\theta = \frac{2}{3}$

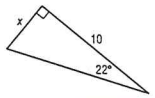
Write an equation involving sin, cos, or tan that can be used to find x. Then solve the equation. Round measures of sides to the nearest tenth and measures of angles to the nearest degree.

4. 

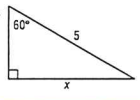
$\tan 30° = \frac{8}{x}$, $x \approx 13.9$

5. 

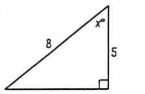
$\cos 60° = \frac{5}{x}$, $x = 10$

6. 

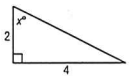
$\tan 22° = \frac{x}{10}$, $x \approx 4.0$

7. 

$\sin 60° = \frac{x}{5}$, $x \approx 4.3$

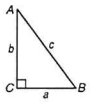
8. 

$\cos x° = \frac{5}{8}$, $x \approx 51$

9. 

$\tan x° = \frac{4}{2}$, $x \approx 63$

Solve $\triangle ABC$ by using the given measurements. Round measures of sides to the nearest tenth and measures of angles to the nearest degree.



10. $A = 72°, c = 10$
$a \approx 9.5, b \approx 3.1, B = 18°$

11. $B = 20°, b = 15$
$a \approx 41.2, c \approx 43.9, A = 70°$

12. $A = 80°, a = 9$
$b \approx 1.6, c \approx 9.1, B = 10°$

13. $A = 58°, b = 12$
$a \approx 19.2, c \approx 22.6, B = 32°$

14. $b = 4, c = 9$
$a \approx 8.1, A \approx 64°, B \approx 26°$

15. $a = 7, b = 5$
$c \approx 8.6, A \approx 54°, B \approx 36°$

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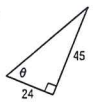
NAME Key DATE PERIOD

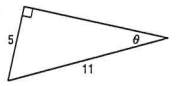
13-1 Practice

Right Triangle Trigonometry

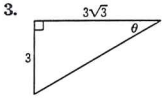
Find the values of the six trigonometric functions for angle θ.

1. 

$\sin\theta = \frac{15}{17}$, $\cos\theta = \frac{8}{17}$, $\tan\theta = \frac{15}{8}$, $\csc\theta = \frac{17}{15}$, $\sec\theta = \frac{17}{8}$, $\cot\theta = \frac{8}{15}$

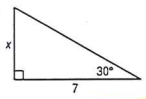
2. 

$\sin\theta = \frac{5}{11}$, $\cos\theta = \frac{4\sqrt{6}}{11}$, $\tan\theta = \frac{5\sqrt{6}}{24}$, $\csc\theta = \frac{11}{5}$, $\sec\theta = \frac{11\sqrt{6}}{24}$, $\cot\theta = \frac{4\sqrt{6}}{5}$

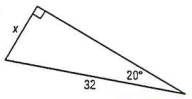
3. 

$\sin\theta = \frac{1}{2}$, $\cos\theta = \frac{\sqrt{3}}{2}$, $\tan\theta = \frac{\sqrt{3}}{3}$, $\csc\theta = 2$, $\sec\theta = \frac{2\sqrt{3}}{3}$, $\cot\theta = \sqrt{3}$

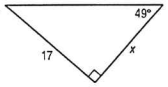
Write an equation involving sin, cos, or tan that can be used to find x. Then solve the equation. Round measures of sides to the nearest tenth and measures of angles to the nearest degree.

4. 

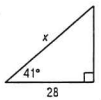
$\tan 30° = \frac{x}{7}$, $x \approx 4.0$

5. 

$\sin 20° = \frac{x}{32}$, $x \approx 10.9$

6. 

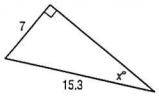
$\tan 49° = \frac{17}{x}$, $x \approx 14.8$

7. 

$\cos 41° = \frac{28}{x}$, $x \approx 37.1$

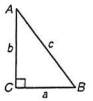
8.

$\tan x° = \frac{19.2}{17}$, $x \approx 48$

9. 

$\sin x° = \frac{7}{15.3}$, $x \approx 27$

Solve $\triangle ABC$ by using the given measurements. Round measures of sides to the nearest tenth and measures of angles to the nearest degree.



10. $A = 35°, a = 12$
$b \approx 17.1, c \approx 20.9, B = 55°$

11. $B = 71°, b = 25$
$a \approx 8.6, c \approx 26.4, A = 19°$

12. $B = 36°, c = 8$
$a \approx 6.5, b \approx 4.7, A = 54°$

13. $a = 4, b = 7$
$c \approx 8.1, A \approx 30°, B \approx 60°$

14. $A = 17°, c = 3.2$
$a \approx 0.9, b \approx 3.1, B = 73°$

15. $b = 52, c = 95$
$a \approx 79.5, A \approx 33°, B \approx 57°$

16. **SURVEYING** John stands 150 meters from a water tower and sights the top at an angle of elevation of 36°. How tall is the tower? Round to the nearest meter. 109 m

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Answers