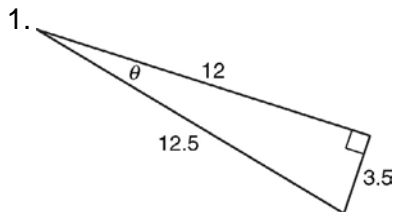Name _____ Date _____ Class_____
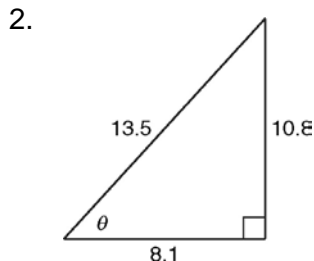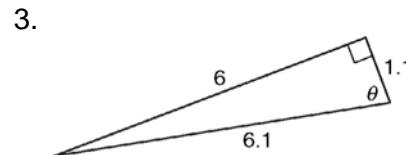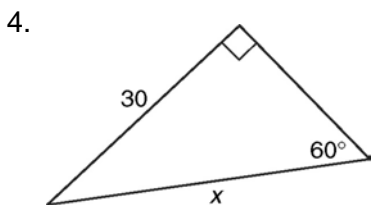
Practice C
Right-Angle Trigonometry

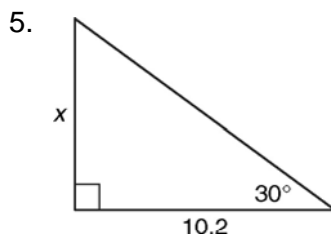**Find the value of the sine, cosine, and tangent functions for θ.**
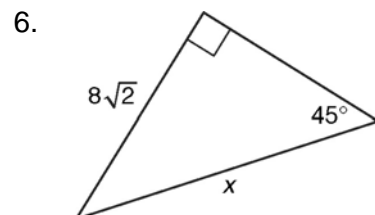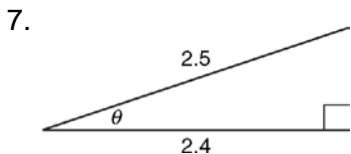
1.

2.

3.

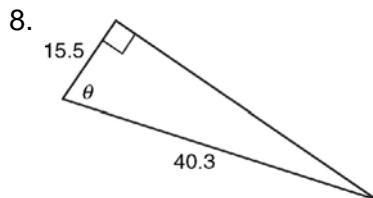_____   _____   _____

Use a trigonometric function to find the value of *x*.

4.

5.

6.

_____   _____   _____

Find the values of the six trigonometric functions for θ.

7.

8.

9.

_____   _____   _____

_____   _____   _____

_____   _____   _____

Solve.

10. A kite string is 102 feet long. The angle between the
    kite string and the ground is 54.9°. How high is the kite?   _____

11. A surveyor stands 186 feet from the base of a cliff and
    measures the angle of elevation to be 56.6°. His eye level
    is 5 feet above the ground. What is the height of the cliff
    to the nearest foot?   _____

12. The pilot of a hot air balloon measures the angle of
    depression to a landing spot to be 36.7°. If the pilot's
    altitude is 1752 meters, what is the horizontal distance
    to the landing spot to the nearest meter?   _____

Holt McDougal Algebra 2

10-1 RIGHT-ANGLE TRIGONOMETRY

Practice A

1. a. $\sin\theta = \dfrac{48}{50} = \dfrac{24}{25}$

   b. $\cos\theta = \dfrac{14}{50} = \dfrac{7}{25}$

   c. $\tan\theta = \dfrac{48}{14} = \dfrac{24}{7}$

2. $\dfrac{3}{5}, \dfrac{4}{5}, \dfrac{3}{4}$

3. $\dfrac{9}{41}, \dfrac{40}{41}, \dfrac{9}{40}$

4. $\dfrac{12}{13}, \dfrac{5}{13}, \dfrac{12}{5}$

5. a. Cosine

   b. $\cos 45° = \dfrac{x}{12\sqrt{2}}$

   c. $\cos 45° = \dfrac{\sqrt{2}}{2}$

   d. $x = 12$

6. 10

7. 8

8. 9

9. 45 ft

Practice B

1. $\dfrac{4}{5}; \dfrac{3}{5}; \dfrac{4}{3}$

2. $\dfrac{9}{41}; \dfrac{40}{41}; \dfrac{9}{40}$

3. $\dfrac{12}{13}; \dfrac{5}{13}; \dfrac{12}{5}$

4. $6\sqrt{3}$

5. $\dfrac{44\sqrt{3}}{3}$

6. 7

7. $\sin\theta = \dfrac{12}{13}; \cos\theta = \dfrac{5}{13}; \tan\theta = \dfrac{12}{5}$

   $\csc\theta = \dfrac{13}{12}; \sec\theta = \dfrac{13}{5}; \cot\theta = \dfrac{5}{12}$

8. $\sin\theta = \dfrac{3}{5}; \cos\theta = \dfrac{4}{5}; \tan\theta = \dfrac{3}{4}$

   $\csc\theta = \dfrac{5}{3}; \sec\theta = \dfrac{5}{4}; \cot\theta = \dfrac{4}{3}$

9. $\sin\theta = \dfrac{9}{41}; \cos\theta = \dfrac{40}{41}; \tan\theta = \dfrac{9}{40}$

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

10. 47 ft

11. 162 ft

12. 4817 m

Practice C

1. $\dfrac{7}{25}; \dfrac{24}{25}; \dfrac{7}{24}$

2. $\dfrac{4}{5}; \dfrac{3}{5}; \dfrac{4}{3}$

3. $\dfrac{60}{61}; \dfrac{11}{61}; \dfrac{60}{11}$

4. $20\sqrt{3}$

5. $3.4\sqrt{3}$

6. 16

7. $\sin\theta = \dfrac{7}{25}; \cos\theta = \dfrac{24}{25};$

   $\tan\theta = \dfrac{7}{24}; \csc\theta = \dfrac{25}{7};$

   $\sec\theta = \dfrac{25}{24}; \cot\theta = \dfrac{24}{7}$

8. $\sin\theta = \dfrac{12}{13}; \cos\theta = \dfrac{5}{13};$

   $\tan\theta = \dfrac{12}{5}; \csc\theta = \dfrac{13}{12};$

   $\sec\theta = \dfrac{13}{5}; \cot\theta = \dfrac{5}{12}$

9. $\sin\theta = \dfrac{\sqrt{10}}{5}; \cos\theta = \dfrac{\sqrt{15}}{5};$

   $\tan\theta = \dfrac{\sqrt{6}}{3}; \csc\theta = \dfrac{\sqrt{10}}{2};$

   $\sec\theta = \dfrac{\sqrt{15}}{3}; \cot\theta = \dfrac{\sqrt{6}}{2}$

10. 83.5 ft

11. 287 ft

12. 2350 m

Reteach

1. $\dfrac{3}{5}$ $\dfrac{4}{5}$ $\dfrac{3}{4}$

2. $\dfrac{12}{13}$ $\dfrac{5}{13}$ $\dfrac{12}{5}$

3. $\dfrac{8}{17}$ $\dfrac{15}{17}$ $\dfrac{8}{15}$

Holt McDougal Algebra 2