Secondary Math III
Unit 6 Review
Assignment 6.6

Name _____
Period _____

True / False. If the answer is false, write a statement to make it true for full credit.

True / False 1. Pythagorean's Theorem can be used for all triangles.

True / False 2. In a 30° – 60° – 90° Triangle, the hypotenuse equals the shorter leg times 2.

Multiple Choice. Choose the best answer (only one correct answer for each problem). Show work.

3. The ratio of which two sides in a right triangle defines the tangent of an acute angle?

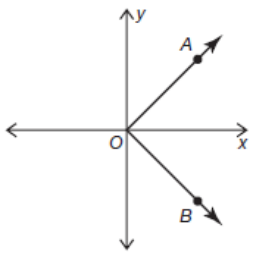
a. $\frac{\text{opposite side}}{\text{hypotenuse}}$ b. $\frac{\text{opposite side}}{\text{adjacent side}}$ c. $\frac{\text{adjacent side}}{\text{opposite side}}$ d. $\frac{\text{adjacent side}}{\text{hypotenuse}}$

4. What is the radian measure of a 225° angle?

a. $\frac{5\pi}{4}$ b. $\frac{4\pi}{3}$ c. $\frac{7\pi}{4}$ d. $\frac{7\pi}{6}$

5. Which angle is in standard position and has a measure less than 180°?

a.



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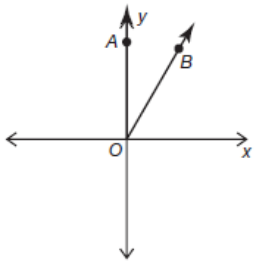

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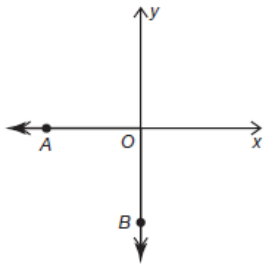

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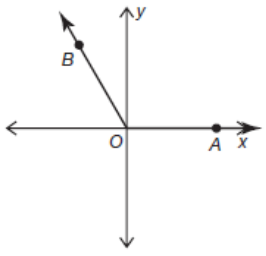


6. In which quadrant is $\cos\theta < 0$ (negative) and $\tan\theta > 0$ (positive)?

a. Quadrant I b. Quadrant II c. Quadrant III d. Quadrant IV

7. A 107-ft tall building casts a shadow of 90 feet. To the nearest whole degree, what is the angle of elevation to the sun?

a. 33° b. 40° c. 50° d. 57°

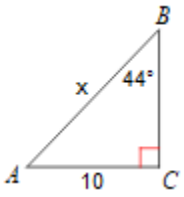
8. What is the exact value of $\sin\frac{\pi}{3}$?

a. $\frac{\sqrt{3}}{2}$ b. $\frac{1}{2}$ c. $-\frac{\sqrt{3}}{2}$ d. $-\frac{1}{2}$

9. A kite on a 100-ft string has an angle of elevation of 18°. How high above the ground is the kite?

a. 91 ft b. 31 ft c. 27 ft d. 18 ft

10. Find the value of *x*. Round to the nearest tenth.



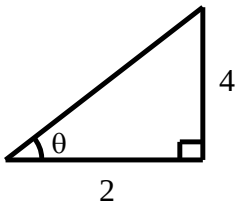
a. 15.6 b. 12.2

c. 14.4 d. 15.9

Free response. Show work.

11. Find the values of the six trigonometric functions for angle θ in exact form (reduced fractions; no decimals).

a.

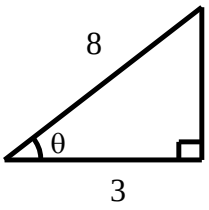


sin θ = _____ csc θ = _____

cos θ = _____ sec θ = _____

tan θ = _____ cot θ = _____

b.



sin θ = _____ csc θ = _____

cos θ = _____ sec θ = _____

tan θ = _____ cot θ = _____

12. Let θ be an acute angle in a right triangle. Use the given information to find the missing values in exact form.

a. $\tan\theta = \frac{4}{5}$

sin θ = _____

cos θ = _____

b. $\cos\theta = \frac{5}{13}$

sin θ = _____

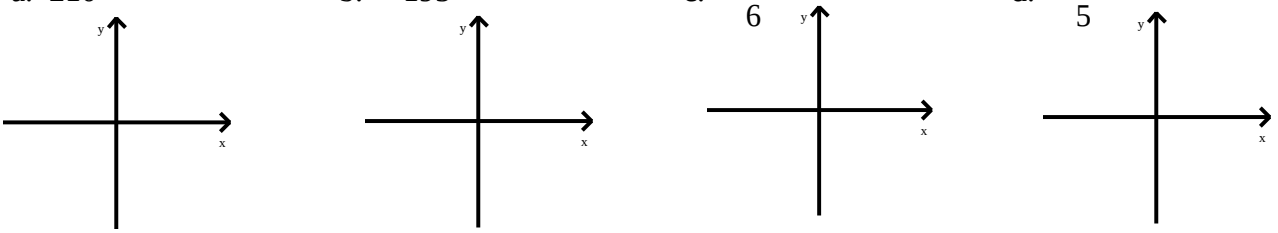
tan θ = _____

13. Convert from degrees to radians or from radians to degrees. Leave radian answers in terms of π.

a. 15° b. 240° c. $\frac{5\pi}{6}$ d. $\frac{3\pi}{10}$

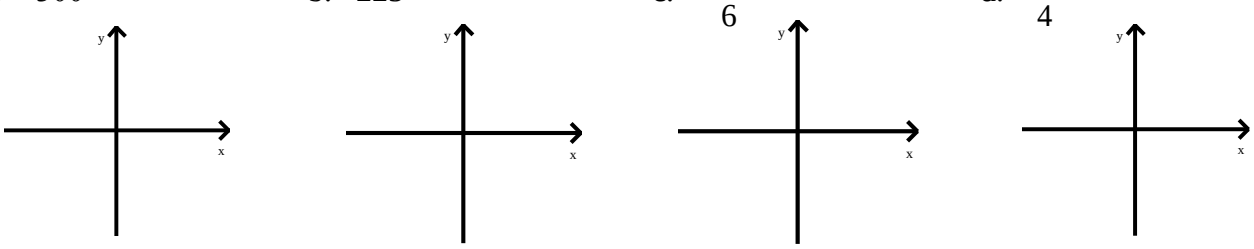
14. Sketch the angle in standard position. Then find two **coterminal angles**, one positive and one negative (degrees for a-b, radians for c-d):

a. 210º b. –195° c. $\frac{5\pi}{6}$ d. $\frac{9\pi}{5}$



15. Sketch the angle in standard position. Then find the **reference angle**.

a. −300º b. 225° c. $\frac{11\pi}{6}$ d. $\frac{3\pi}{4}$



16. Given a point on the terminal side of θ, find sin θ, cos θ, and tan θ. Leave answer in simplified fraction form.

a. (4, –11) b. (–1, 2) c. $(-\sqrt{3}, -4)$

sin θ = _____ sin θ = _____ sin θ = _____

cos θ = _____ cos θ = _____ cos θ = _____

tan θ = _____ tan θ = _____ tan θ = _____

17. Find the **exact** value of the trig function (no decimals).

a. $\cos\frac{3\pi}{2}$ b. $\sin 240^\circ$ c. $\tan\frac{5\pi}{3}$ d. $\cos\frac{\pi}{6}$

e. $\sin 150°$ f. $\tan 135°$ g. $\cos 0$ h. $\cos\frac{3\pi}{4}$

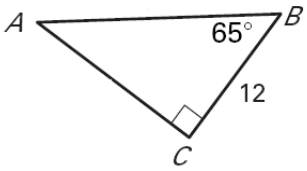
18. Use a calculator to evaluate the following (round to 4 decimal places). Be sure to check mode. REMEMBER to CHANGE back to DEGREE mode.

a. $\tan(-38^\circ)$ b. $\csc 215°$ c. $\cos 2.5$ d. $\cot 1.3$

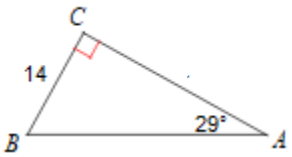
19. Two legs of a right triangle have lengths 14 & 9. Find the measure of the smallest acute angle to the *nearest tenth of a degree*.

20. Solve for both missing sides. Show the equation used to solve each side. *Round to the nearest tenth*.

a.



b.



21. **Hint: You will have to know how to draw a picture for the test.**
At the local water park, the big slide has a length of 85 feet. If the ladder is vertical and the angle of depression at the top of the slide is 40°, how far is the bottom of the slide from the bottom of the ladder? (Draw a triangle and show an equation to solve.) *Round to the nearest tenth*.