

1.) Match each trigonometric function in Column I with its value in Column II. Choices may be used once, more than once, or not at all.

$$\sin 30^\circ = C = \frac{1}{2}$$

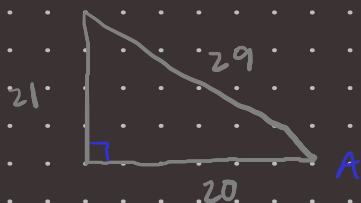
$$2.) \cos 45^\circ = \text{N/A}, \text{ should be } \frac{1}{\sqrt{2}}$$

$$3.) \tan 45^\circ = B = 1$$

$$4.) \sec 60^\circ = G = 2$$

$$5.) \csc 60^\circ = \text{N/A}, \text{ should be } \frac{2}{\sqrt{3}}$$

7.)



$$\sin A = \frac{21}{29}$$

$$\cos A = \frac{20}{29}$$

$$\tan A = \frac{20}{21}$$

25. Write each function in terms of its cofunction. Assume that all angles labeled θ are acute angles.

$$\sec 39^\circ$$

$$90 - 39 = 51^\circ$$

$$= \csc 51^\circ$$

$$27. \sin 38.7^\circ$$

$$90 - 38.7 = 51.3^\circ$$

$$= \cos 51.3^\circ$$

31. Find one solution for each equation. Assume that all angles involved are acute angles.

$$\tan \alpha = \cot(\alpha + 10^\circ)$$

$$\begin{array}{r} 2\alpha + 10 = 90 \\ -10 \quad -10 \end{array} \quad \tan 40^\circ = \cot 50^\circ$$

$$\frac{2\alpha}{2} = \frac{80}{2}$$

$$\alpha = 40^\circ$$

$$33. \sin(2\theta + 10^\circ) = \cos(3\theta - 20^\circ)$$

$$2\theta + 10^\circ + 3\theta - 20^\circ = 90^\circ \quad \sin 50^\circ = \cot 40^\circ$$

$$\begin{array}{r} 5\theta - 10^\circ = 90^\circ \\ +10^\circ \quad +10^\circ \end{array}$$

$$\theta = 20^\circ$$

$$\frac{5\theta}{5} = \frac{100}{5}$$

$$2\theta + 10^\circ = 50^\circ$$

$$3\theta - 20^\circ = 40^\circ$$

49. Give the exact value for each expression.

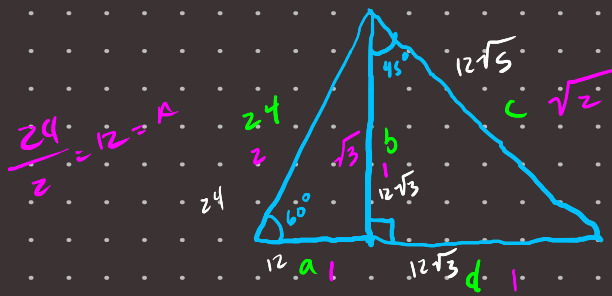
$$\tan 30^\circ = \frac{\text{OPP}}{\text{A}} = \frac{1}{\sqrt{3}}$$

$$51. \sin 30^\circ = \frac{\text{OPP}}{\text{HYP}} = \frac{1}{2}$$

$$56. \sec 45^\circ = \frac{\text{HYP}}{\text{Adj}} = \frac{\sqrt{2}}{1} = \sqrt{2}$$

$$62. \cos 60^\circ = \frac{\text{Adj}}{\text{HYP}} = \frac{1}{2}$$

74. Find the exact value of the variables in each figure.



$$a = 12$$

$$b = 12\sqrt{3}$$

$$c = 12\sqrt{5}$$

$$d = 12\sqrt{3}$$

$$\cos 60 = \frac{12}{24}$$

$$\tan 60 = \frac{12\sqrt{3}}{12}$$

$$\sin 45 = \frac{12\sqrt{3}}{12\sqrt{3}\sqrt{2}}$$

$$12\sqrt{3}\sqrt{2} = 12\sqrt{6}$$

77. Find a formula for the area of each figure in terms of s .



$$s = 1$$

$$1^2 = 1$$

$$\frac{1}{2} = \frac{1}{2}$$

$$S_{\text{area}} = \frac{1}{2}$$