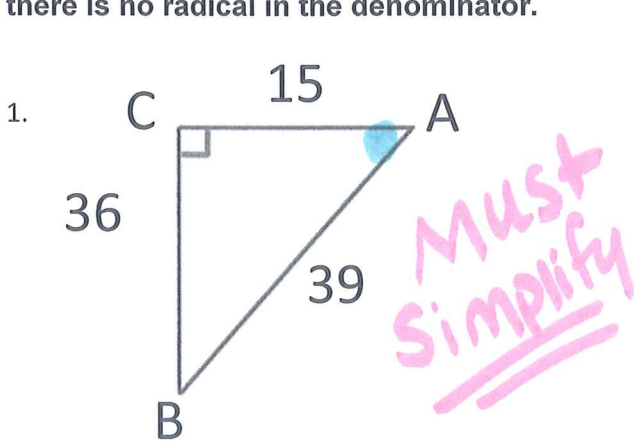


Name: \_\_\_\_\_

# Special Right Triangles and Trig Ratios Notes

Directions: Find the exact trig ratio value. Simplify all radicals, simplify all fractions and make sure there is no radical in the denominator.



$$\sin A = \frac{36 \div 3}{39 \div 3} = \frac{12}{13}$$

$$\cos A = \frac{15}{39} = \frac{5}{13}$$

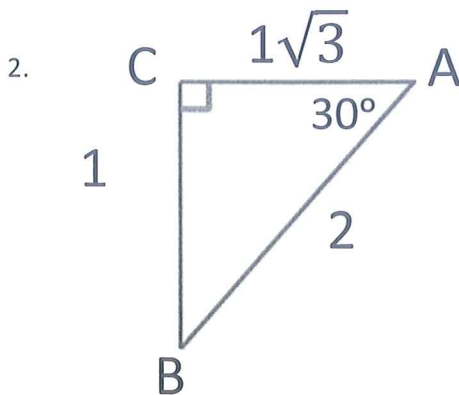
$$\tan A = \frac{36}{15} = \frac{12}{5}$$

$$\sin B = \frac{15}{39} = \frac{5}{13}$$

$$\cos B = \frac{36}{39} = \frac{12}{13}$$

$$\tan B = \frac{15}{36} = \frac{5}{12}$$

Special Right Triangle



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

$$\cos A = \frac{1\sqrt{3}}{2} = \frac{\sqrt{3}}{2}$$

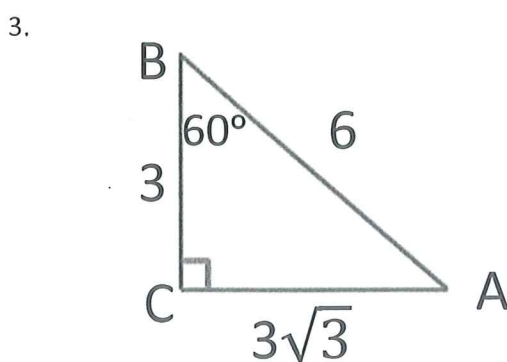
$$\tan A = \frac{1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{1\sqrt{3}}{\sqrt{3} \cdot \sqrt{3}} = \frac{\sqrt{3}}{3}$$

$$\sin B = \frac{\sqrt{3}}{2}$$

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

$$\tan B = \frac{\sqrt{3}}{1} = \sqrt{3}$$

Special Right Triangle



$$\sin A = \frac{3}{6} = \frac{1}{2}$$

$$\cos A = \frac{3\sqrt{3}}{6} = \frac{\sqrt{3}}{2}$$

$$\tan A = \frac{3}{3\sqrt{3}} = \frac{1}{\sqrt{3}}$$

$$\frac{1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{3}}{\sqrt{3} \cdot \sqrt{3}} = \frac{\sqrt{3}}{3}$$

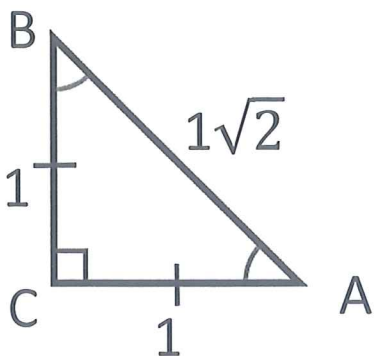
$$\sin B = \frac{3\sqrt{3}}{6} = \frac{\sqrt{3}}{2}$$

$$\cos B = \frac{3}{6} = \frac{1}{2}$$

$$\tan B = \frac{3\sqrt{3}}{3} = \sqrt{3}$$

Special Right Triangle

4.



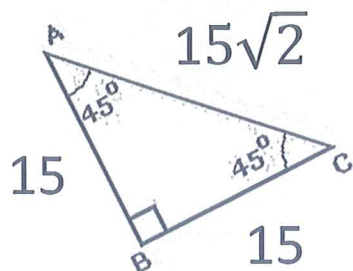
$$\sin A = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{\sqrt{4}} = \frac{\sqrt{2}}{2} \quad \sin B = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{\sqrt{4}} = \frac{\sqrt{2}}{2}$$

$$\cos A = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{\sqrt{4}} = \frac{\sqrt{2}}{2} \quad \cos B = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{\sqrt{4}} = \frac{\sqrt{2}}{2}$$

$$\tan A = \frac{1}{1} = 1 \quad \tan B = \frac{1}{1} = 1$$

Special Right Triangle

5.

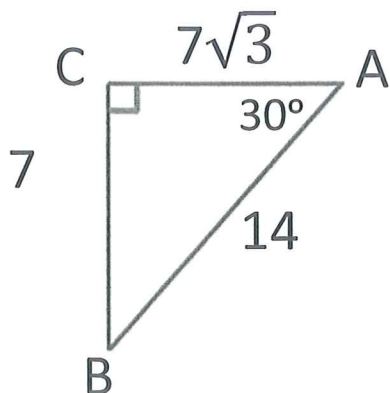


$$\sin A = \frac{15}{15\sqrt{2}} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2} \quad \sin B = \frac{15}{15\sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$\cos A = \frac{15}{15\sqrt{2}} = \frac{\sqrt{2}}{2} \quad \cos B = \frac{15}{15\sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$\tan A = \frac{15}{15} = 1 \quad \tan B = \frac{15}{15} = 1$$

6. Special Right Triangle



$$\sin A = \frac{7}{14} = \frac{1}{2} \quad \sin B = \frac{7\sqrt{3}}{14} = \frac{\sqrt{3}}{2}$$

$$\cos A = \frac{7\sqrt{3}}{14} = \frac{\sqrt{3}}{2} \quad \cos B = \frac{7}{14} = \frac{1}{2}$$

$$\tan A = \frac{7}{7\sqrt{3}} = \frac{1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{3}}{3} \quad \tan B = \frac{7\sqrt{3}}{7} = \sqrt{3}$$

$$\frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{3}}{3}$$