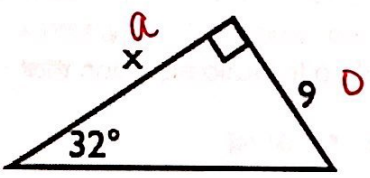
Day 7 – Solving Equations with Trig Ratios – ~~Notes~~ Practice

1.



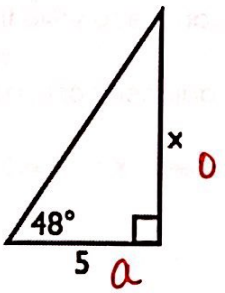
$\frac{\tan 32^\circ}{1} = \frac{9}{x}$

$x \cdot \tan 32^\circ = 9$

$x = \frac{9}{\tan 32^\circ}$

$\boxed{x \approx 14.4}$

2.

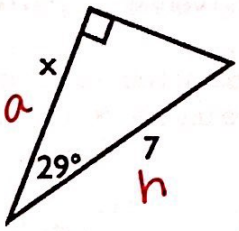


$\frac{\tan 48^\circ}{1} = \frac{x}{5}$

$x = 5 \cdot \tan 48^\circ$

$\boxed{x \approx 5.6}$

3.

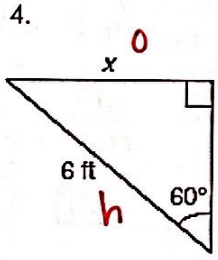


$\frac{\cos 29}{1} = \frac{x}{7}$

$x = 7 \cdot \cos 29$

$\boxed{x \approx 6.1}$

4.

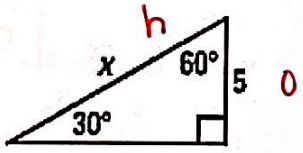


$\frac{\sin 60}{1} = \frac{x}{6}$

$x = 6 \cdot \sin 60$

$\boxed{x \approx 5.2 \text{ or } 3\sqrt{3}}$

5.



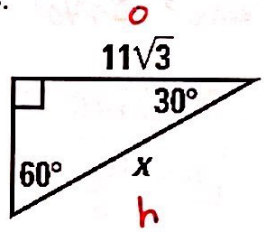
$\frac{\sin 30^\circ}{1} = \frac{5}{x}$

$x \cdot \sin 30 = 5$

$x = \frac{5}{\sin 30}$

$\boxed{x = 10}$

6.



$\frac{\sin 60^\circ}{1} = \frac{11\sqrt{3}}{x}$

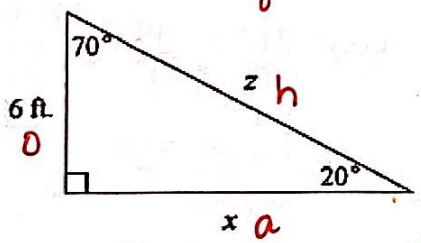
$x \cdot \sin 60 = 11\sqrt{3}$

$x = \frac{11\sqrt{3}}{\sin 60}$

$\boxed{x = 22}$

Example 3: Create a trig ratio equation that can be used to find the missing sides. Then solve for the missing variables.

Equation setup may vary.



$\frac{\sin 20^\circ}{1} = \frac{6}{z}$

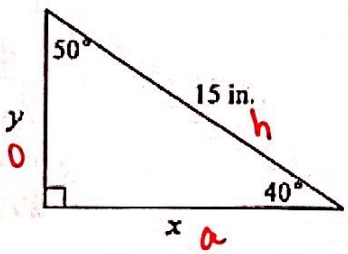
$z \cdot \sin 20 = 6$

$\boxed{z = \frac{6}{\sin 20} \approx 17.5}$

$\frac{\tan 20^\circ}{1} = \frac{6}{x}$

$x \cdot \tan 20^\circ = 6$

$\boxed{x = \frac{6}{\tan 20} \approx 16.5}$



$\frac{\sin 40^\circ}{1} = \frac{y}{15}$

$\boxed{y = 15 \cdot \sin 40 \approx 9.6}$

$\frac{\cos 40}{1} = \frac{x}{15}$

$\boxed{x = 15 \cdot \cos 40 \approx 11.5}$