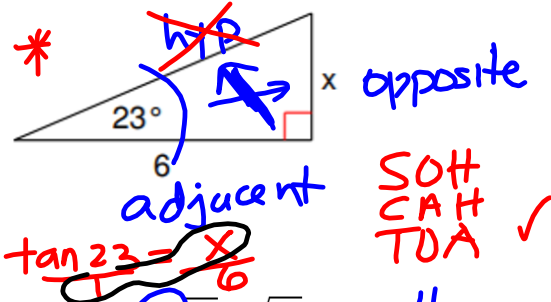


Lesson 9.3- SWBAT find the missing angles of a right triangle.

Kick off-

1) Solve for the missing side of the triangle.



$\tan 23 = \frac{x}{6}$

3) Simplify: $2\sqrt{24} - \sqrt{54}$

$2 \cdot 2\sqrt{6} - 3\sqrt{6}$
 $4\sqrt{6} - 3\sqrt{6} = \sqrt{6}$

2) Complete the square: $x^2 - 2x - 24 = 0$

$x^2 - 2x = 24$
 $(x-1)^2 = 24 + 1$
 $(x-1)^2 = 25$
 $x-1 = \pm 5$

4) Find $f^{-1}(x)$ of $f(x) = 2x + 4$

$y = 2x + 4$
 $x = \frac{y-4}{2}$

SOH CAH TOA

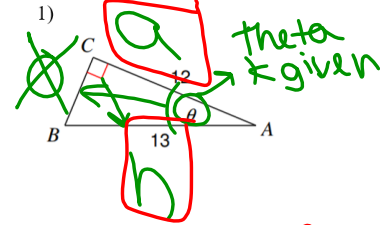
Trigonometric Ratios to Find Angle

When you solve for an angle, use inverse trig! \sin^{-1} then trig function

$\sin \theta = \frac{\text{Opp}}{\text{hyp}}$ $\cos \theta = \frac{\text{Adj}}{\text{hyp}}$ $\tan \theta = \frac{\text{Opp}}{\text{Adj}}$

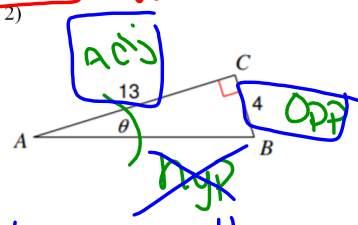
Examples:

Directions: Solve for the missing angle. Round to the nearest degree. \rightarrow Whole #



$\cos \theta = \frac{12}{13}$

$\theta = \cos^{-1}(\frac{12}{13})$
 $\theta = 22.61 = 23$



$\tan \theta = \frac{4}{13}$

$\theta = \tan^{-1}(\frac{4}{13}) = 17.10$
 $\theta = 17$

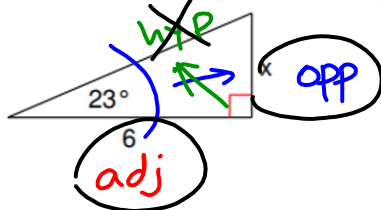
Homework Answers

- | | | |
|----------|----------|----------|
| 1) 5.3 | 2) 24 | 3) 2 |
| 4) 4.7 | 5) 12.2 | 6) 6 |
| 8) 5.2 | 9) 25.6 | 10) 50.7 |
| 11) 15 | 12) 9.1 | 13) 10.4 |
| 14) 68.9 | 15) 12.7 | 16) 5.4 |
| 17) 10.3 | 18) 12.9 | 19) 2.5 |

Lesson 9.3- SWBAT find the missing angles of a right triangle. (Day 2)

Kick off-

1) Solve for the missing side of the triangle.



SOH
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?

2) Complete the square: $x^2 + 6x - 24 = 0$

$$\begin{aligned}
 &+24 +24 \\
 &\frac{1}{2}(6) = 3 \quad x^2 + 6x = 24 \\
 &(x+3)^2 = 24+9 \\
 &\sqrt{(x+3)^2} = \sqrt{33} \\
 &x+3 = \pm\sqrt{33} \\
 &\quad -3 \quad -3 \\
 &\hline
 x = -3 \pm \sqrt{33}
 \end{aligned}$$

3) Find $f^{-1}(x)$ of $f(x) = 3x - 7$

$$\begin{aligned}
 y &= 3x - 7 \\
 x &= \frac{y+7}{3} \\
 \hline
 x+7 &= 3y \\
 3 \quad 3
 \end{aligned}$$

$$\frac{x+7}{3} = y = f^{-1}(x)$$

Trigonometric Ratios to Find Angle

$$\sin \theta = \frac{\text{opp}}{\text{hyp}}$$

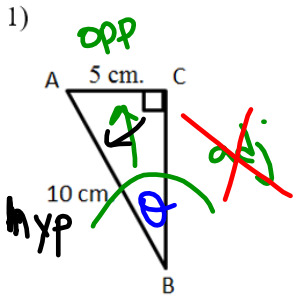
$$\cos \theta = \frac{\text{adj}}{\text{hyp}}$$

$$\tan \theta = \frac{\text{opp}}{\text{adj}}$$

SOH CAH TOA

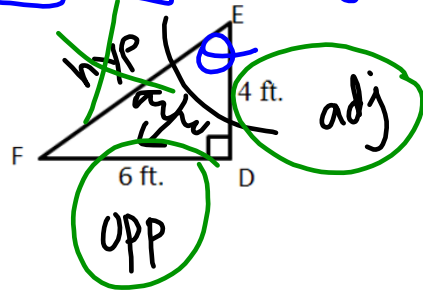
Examples:

Directions: Solve for the missing angle. Round to the nearest degree.

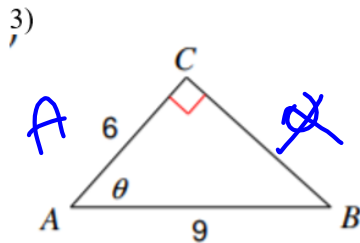


$$\sin \theta = \frac{5}{10} \therefore \theta = 30^\circ$$

2nd then trig function



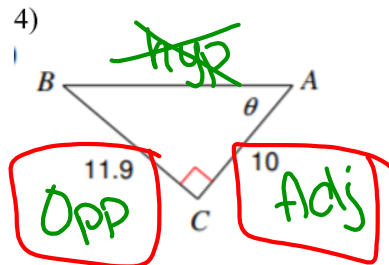
$$\tan \theta = \frac{6}{4} = 56.3 \rightarrow \theta = 56^\circ$$



$$\cos \theta = \frac{6}{9}$$

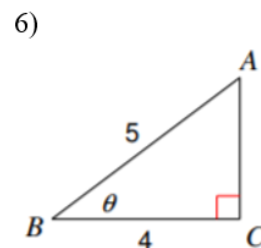
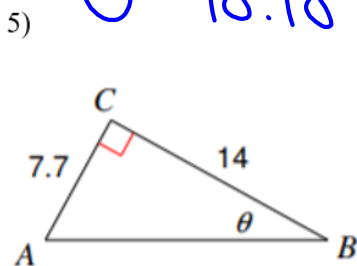
$$\theta = \cos^{-1}(6/9)$$

$$\theta = 48.18 = 48^\circ$$

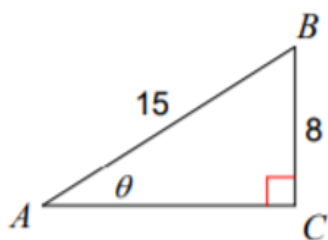


$$\tan^{-1}(11.9/10)$$

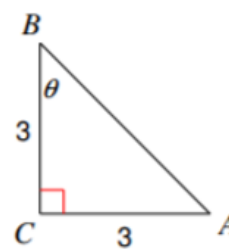
$$\theta = 49.95 = 50^\circ$$



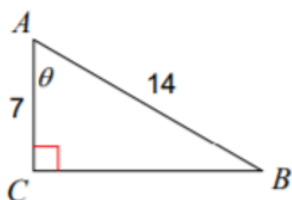
7)



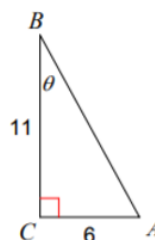
8)



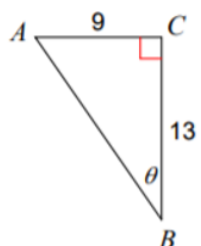
9)



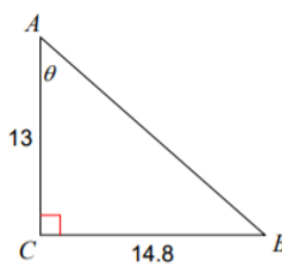
10)



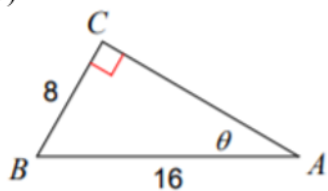
11)



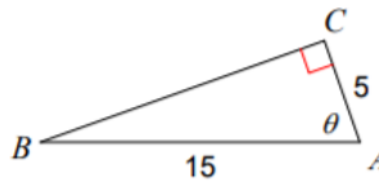
12)



13)



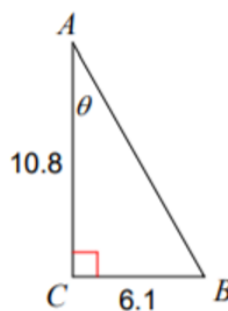
14)



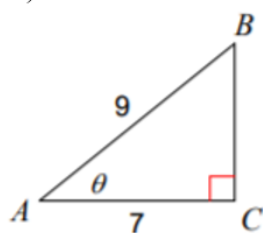
15)



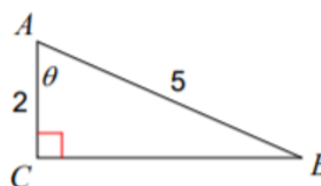
16)



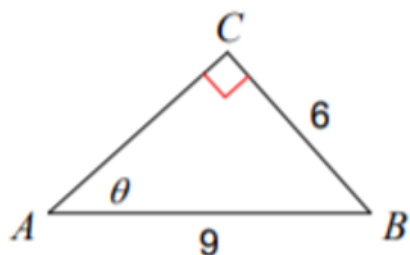
17)



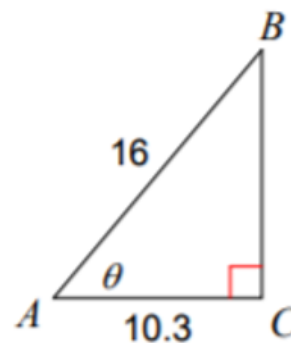
18)



19)



20)



Exit Pass - Solve for the missing angle to the nearest degree.

