

1. Three

2. $x = 2\sqrt{5}$

$$\frac{x}{4} = \frac{5}{x}$$

$$x^2 = 20$$

$$x = \sqrt{20} = 2\sqrt{5}$$

3. $x = 10$
 $y = 2\sqrt{29}$
 $z = 5\sqrt{29}$

$$\frac{x}{4} = \frac{25}{x} \quad \frac{y}{4} = \frac{29}{y} \quad \frac{10}{4} = \frac{z}{2\sqrt{29}}$$

$$x = 10 \quad y = 2\sqrt{29} \quad z = 5\sqrt{29}$$

4. One can find the length of a side of a right triangle given the distance of two other sides.

5. No

$$6^2 + 9^2 = 12^2 \quad a^2 + b^2 = c^2$$

$$36 + 81 = 144$$

$$117 \neq 144$$



these do not equal
 therefore not a
 right Δ .

6. $y = 12\sqrt{2}$

$$\begin{aligned}6^2 + y^2 &= 18^2 \\36 + y^2 &= 324 \\y^2 &= 288 \\y &= \sqrt{288}\end{aligned}$$

$$\begin{aligned}y &= \sqrt{288} = \sqrt{2 \cdot 16 \cdot 9} \\&= 4 \cdot 3 \cdot \sqrt{2} \\y &= 12\sqrt{2}\end{aligned}$$

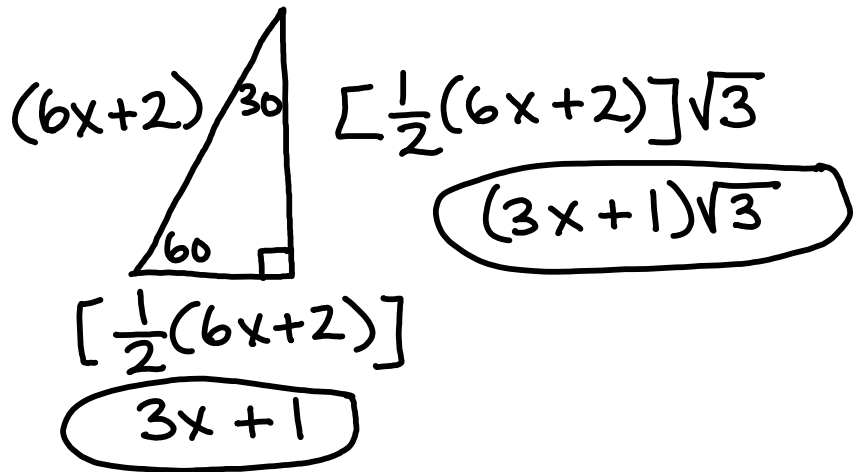
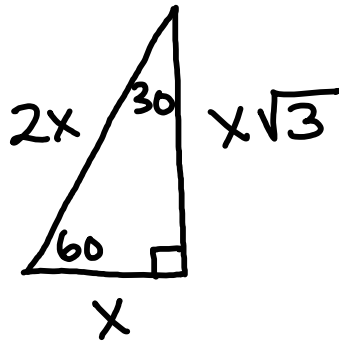
7. $45^\circ-45^\circ$ right triangle, $30^\circ-60^\circ$ right triangle.

8. $y = 4$
 $x = 2\sqrt{3}$

9. $x = 12$

$$\begin{aligned}h &= x\sqrt{2} \\12\sqrt{2} &= x\sqrt{2} \\x &= 12\end{aligned}$$

10. $(3x+1)$
 $(3x+1)\sqrt{3}$



11. "SOH" \rightarrow sine = $\frac{\text{opposite}}{\text{hypotenuse}}$

"CAH" \rightarrow cosine = $\frac{\text{adjacent}}{\text{hypotenuse}}$

"TOA" \rightarrow tangent = $\frac{\text{opposite}}{\text{adjacent}}$

12. true

13. "CAH" \rightarrow cosine = $\frac{\text{adjacent}}{\text{hypotenuse}}$

14. arcsin of x° or inverse sin x°

15. .29166 $\tan x^\circ = \frac{\text{opposite}}{\text{adjacent}} = \frac{7}{24}$
 $= .29166$

16. .97886 $\sin(78.2^\circ) = \text{use calculator}$
 $= .97886$

17. 54° $\cos^{-1}(.6156614) = \text{use}$
 calculator

$$\cos(54^\circ) = .6156614$$

18. 16.26°

$$\tan^{-1}\left(\frac{7}{24}\right) = \tan^{-1}(0.29166)$$

$$\tan^{-1}(0.29166) = 16.26^\circ$$

19. $x = 2.22$
 $r = 3.45$

$$\tan(40) = \frac{x}{\sqrt{7}}$$

$$\sqrt{7} \tan(40) = x$$

$$x = 2.22$$

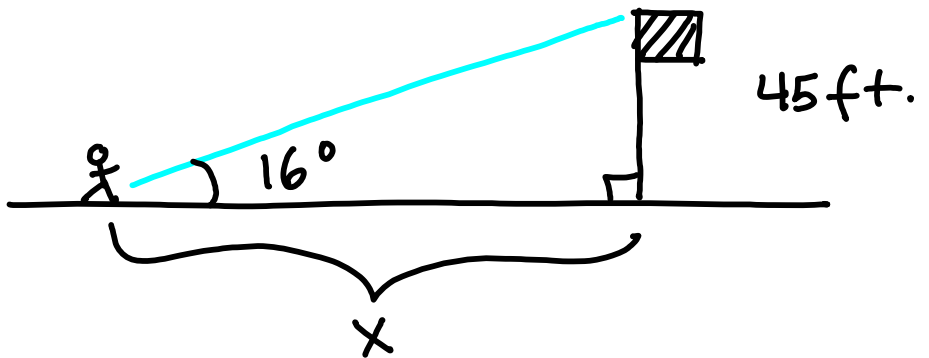
$$\cos(40) = \frac{\sqrt{7}}{r}$$

$$r \cos(40) = \sqrt{7}$$

$$r = \frac{\sqrt{7}}{\cos(40)}$$

$$r = 3.45$$

20. 156.9 ft.



$$\tan(16^\circ) = \frac{45}{x}$$

$$x \tan(16) = 45$$

$$x = \frac{45}{\tan(16)} = 156.9 \text{ ft.}$$