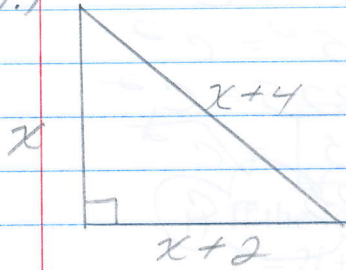


1.)



$$a^2 + b^2 = c^2$$

$$x^2 + (x+2)^2 = (x+4)^2$$

$$x^2 + x^2 + 4x + 4 = x^2 + 8x + 16$$

$$2x^2 + 4x + 4 = x^2 + 8x + 16$$

$$-x^2 - 8x - 16$$

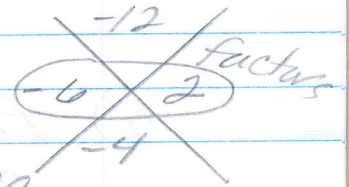
$$x^2 - 4x - 12 = 0$$

$$(x-6)(x+2) = 0$$

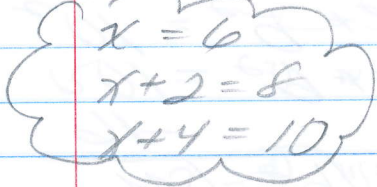
$$x = 6$$

$$x = -2$$

reject b/c no neg. sides



ans:



2.) $a^2 + b^2 = c^2$

$$(x+4)^2 + x^2 = 20^2$$

$$x^2 + 8x + 16 + x^2 = 400$$

$$2x^2 + 8x + 16 = 400$$

$$-400 - 400$$

Factor out by 2 $2x^2 + 8x - 384 = 0$

$$2(x^2 + 4x - 192) = 0$$

$$2(x+16)(x-12) = 0$$

$$2 \neq 0 \quad x+16 = 0$$

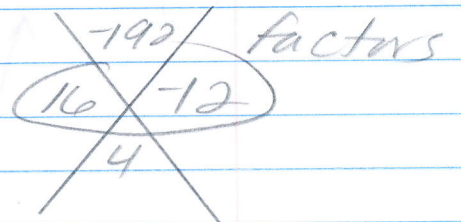
$$x = -16$$

reject

$$x-12 = 0$$

$$x = 12$$

ac



height = $x+4$

$$= 12+4$$

$$= 16 \text{ m}$$

3.) $a^2 + b^2 = c^2$

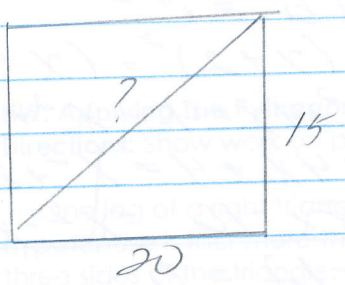
$$5^2 + 7^2 = c^2$$

$$25 + 49 = c^2$$

$$\sqrt{74} = \sqrt{c^2}$$

$$8.6 = c$$

4



$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 20^2 + 15^2 &= c^2 \\
 400 + 225 &= c^2 \\
 \sqrt{625} &= \sqrt{c^2} \\
 25 &= c
 \end{aligned}$$

5)

fig. 1

$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 8^2 + b^2 &= 10^2 \\
 64 + b^2 &= 100 \\
 -64 & \quad -64 \\
 \hline
 \sqrt{b^2} &= \sqrt{36} \\
 b &= 6
 \end{aligned}$$

fig. 2

$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 4^2 + b^2 &= 10^2 \\
 16 + b^2 &= 100 \\
 -16 & \quad -16 \\
 \hline
 \sqrt{b^2} &= \sqrt{84} \\
 b &= 9.2
 \end{aligned}$$

$$\begin{aligned}
 9.2 - 6 &= 3.2 \\
 3.2 &= c
 \end{aligned}$$