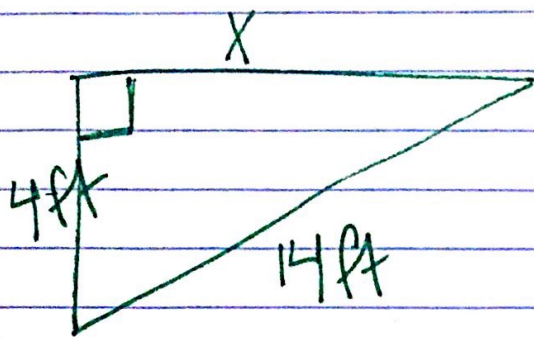


3



$$4^2 + X^2 = 14^2$$

$$16 + X^2 = 196$$
$$X^2 = 180$$

$$X = \sqrt{180}$$

$$\begin{array}{c} 18 \quad 10 \\ \wedge \quad \wedge \\ 9 \quad 2 \quad 2 \quad 5 \\ \wedge \quad \wedge \\ 3 \quad 3 \end{array}$$

$$X = 6\sqrt{5} \text{ ft}$$

Pythagorean Theorem Converse

↳ If the square of one side of a Δ is equal to the sum of the squares of the other 2 sides, then it's a right Δ .

① Do the side lengths form a right Δ ?

a) 12, 13, 15

$$15^2 = 12^2 + 13^2$$

$$225 = 313$$

Not a right Δ

b) 9, 41, 40

$$41^2 = 9^2 + 40^2$$

$$1681 = 1681$$

right Δ

In $\triangle ABC$, if c is the longest side of the \triangle , then...

$$\begin{aligned} c^2 < a^2 + b^2 &\longrightarrow \text{Acute} \\ c^2 = a^2 + b^2 &\longrightarrow \text{Right} \\ c^2 > a^2 + b^2 &\longrightarrow \text{Obtuse} \end{aligned}$$

① Determine if the \triangle is right, acute, obtuse

a) 6, 7, 8

$$c^2 = 8^2 = 64 < a^2 + b^2 = 6^2 + 7^2 = 85$$

[Acute]

b) 3, 4, 5

$$c^2 = 5^2 = 25 = a^2 + b^2 = 3^2 + 4^2 = 25$$

[Right]

c) 2, 3, 4

$$c^2 = 4^2 = 16 > a^2 + b^2 = 2^2 + 3^2 = 13$$

[Obtuse]