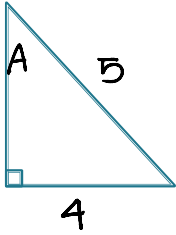
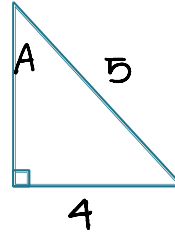


Find the missing angle, $\angle A$.



Find the missing angle, $\angle A$.

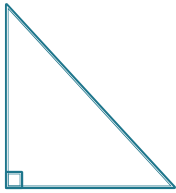


$$\sin A = \frac{4}{5}$$

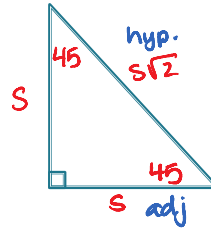
$$A = \sin^{-1}\left(\frac{4}{5}\right)$$

$$\angle A \approx 53.13^\circ$$

Find $\cos 45^\circ$



Find $\cos 45^\circ$

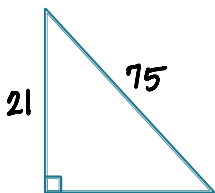


$$\cos 45^\circ = \frac{\text{adj}}{\text{hyp}}$$

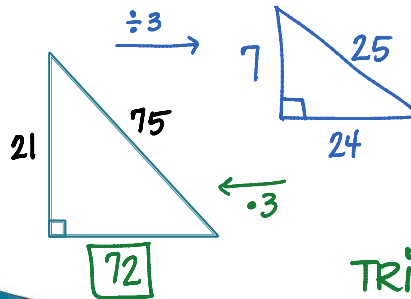
$$= \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$$

$$= \frac{\sqrt{2}}{2}$$

Find the missing side length.

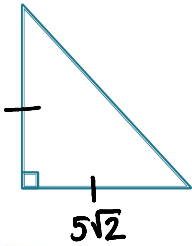


Find the missing side length.



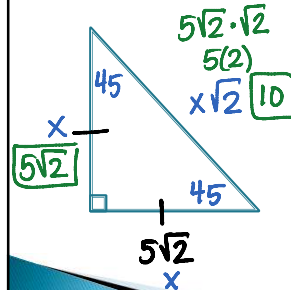
TRIPLE 😊

Find the missing side length.

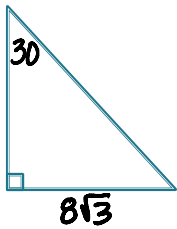


Find the missing side length.

45-45-90 Δ

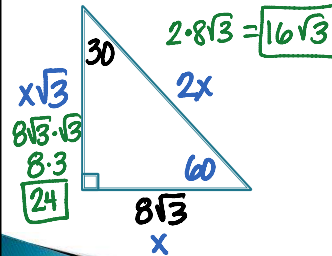


Find the missing side length.

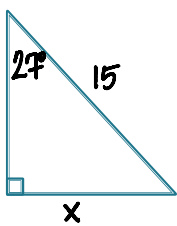


Find the missing side length.

30-60-90 Δ

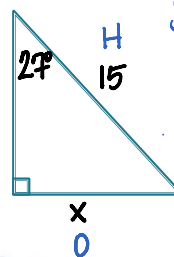


Find the missing side length.



Find the missing side length.

Not special ☹ ... use Trig!



$$\sin(27) = \frac{x}{15}$$

$$x = 15 \cdot \sin(27)$$

$$x \approx 6.81$$

Find the missing side length.

A right-angled triangle with a vertical leg of length 9 and a horizontal leg of length 15. The right angle is at the bottom-left corner.

Find the missing side length.

not a triple ☹️
... use $a^2 + b^2 = c^2$

$$3^2 + 5^2 = c^2$$

$$9 + 25 = c^2$$

$$34 = c^2$$

$$\pm\sqrt{34} = c$$

$$2 \uparrow 17$$

$$c = \sqrt{34}$$

The diagram shows a right triangle with legs 9 and 15. A smaller similar right triangle is drawn inside with legs 3 and 5, and hypotenuse $\sqrt{34}$. Arrows indicate a scale factor of $\div 3$ from the larger triangle to the smaller one, and $\cdot 3$ from the smaller one back to the larger one. The hypotenuse of the larger triangle is labeled $3\sqrt{34}$.

Find the missing side length.

A right-angled triangle with a vertical leg of length 20 and a horizontal leg of length 48. The right angle is at the bottom-left corner.

Find the missing side length.

Triple... woot woot ☺️

The diagram shows a right triangle with legs 20 and 48. A smaller similar right triangle is drawn inside with legs 5 and 12, and hypotenuse 13. Arrows indicate a scale factor of $\div 4$ from the larger triangle to the smaller one, and $\cdot 4$ from the smaller one back to the larger one. The hypotenuse of the larger triangle is labeled 52.

Find the missing side length.

A right-angled triangle with a vertical leg of length 39 and an angle of 74° at the bottom-right corner. The horizontal leg is labeled x . The right angle is at the bottom-left corner.

Find the missing side length.

only one side... $S_A C_A T_A$ time ☺️

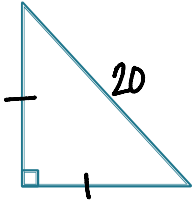
T_A $\tan(74) = \frac{39}{x}$

$$x \cdot \frac{\tan(74)}{\tan(74)} = \frac{39}{\tan(74)}$$

$$x \approx 11.18$$

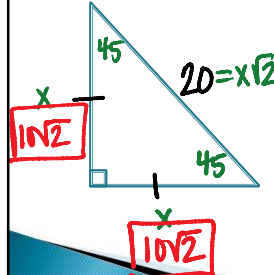
The diagram shows a right triangle with a vertical leg of length 39 and an angle of 74° at the bottom-right corner. The horizontal leg is labeled x . The right angle is at the bottom-left corner.

Find the missing side length.



Find the missing side length.

45-45-90 Δ



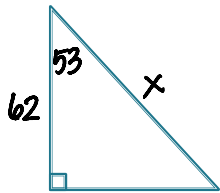
$$\frac{x\sqrt{2}}{\sqrt{2}} = \frac{20}{\sqrt{2}}$$

$$x = \frac{20 \cdot \sqrt{2}}{\sqrt{2} \cdot \sqrt{2}}$$

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

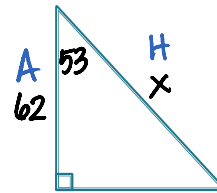
$$x = 10\sqrt{2}$$

Find the missing side length.



Find the missing side length.

not special... Trig Time!

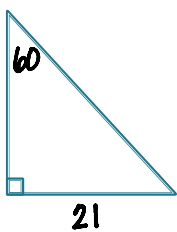


$$\frac{C}{H} = \frac{\cos 53 = 62}{x}$$

$$x \cdot \cos 53 = \frac{62}{\cos 53}$$

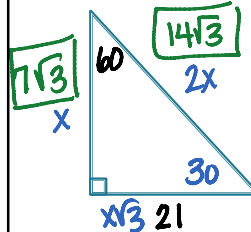
$$x \approx 103.02$$

Find the missing side length.



Find the missing side length.

30-60-90 Δ 😊



$$\frac{x\sqrt{3}}{\sqrt{3}} = \frac{21}{\sqrt{3}}$$

$$x = \frac{21 \cdot \sqrt{3}}{\sqrt{3} \cdot \sqrt{3}}$$

$$x = \frac{21\sqrt{3}}{3}$$

$$x = 7\sqrt{3}$$