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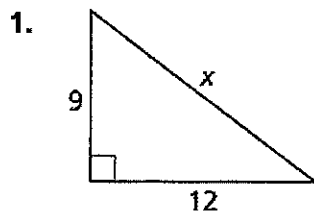
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HW #9-5: Quiz Review

Find the value of x . Give answers in exact (simplified completely) and approximate forms. Then tell whether the side lengths form a Pythagorean Triple.

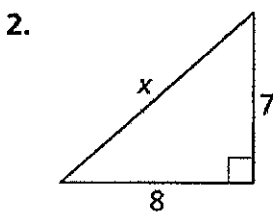


$$9^2 + 12^2 = x^2$$

$$225 = x^2$$

$$x = 15$$

yes a triple

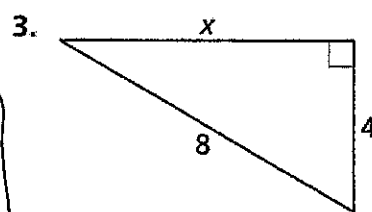


$$8^2 + 7^2 = x^2$$

$$x^2 = 113$$

$$x = \sqrt{113} \approx 10.63$$

Not a triple



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

$$x^2 = 48$$

$$x = 4\sqrt{3} \approx 6.93$$

Not a triple

Verify that the segment lengths form a triangle. Is the triangle *acute*, *right* or *obtuse*?

4. 24, 32, and 40

$$24 + 32 > 40$$

yes, a Δ

$$24^2 + 32^2 \stackrel{?}{=} 40^2$$

$$1600 = 1600$$

right Δ

5. 7, 9, and 13

$$7 + 9 > 13$$

yes, a Δ

$$7^2 + 9^2 \stackrel{?}{=} 13^2$$

$$130 < 169$$

obtuse Δ 6. 12, 15, and $10\sqrt{3}$

$$12 + 15 > 10\sqrt{3}$$

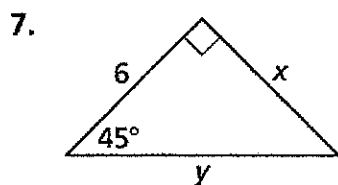
yes, a Δ

$$12^2 + 15^2 \stackrel{?}{=} (10\sqrt{3})^2$$

$$369 > 300$$

acute Δ

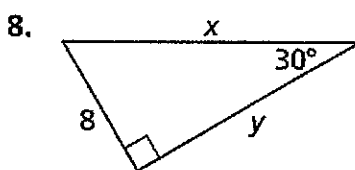
Find the values of x and y . Give answers in exact form only, simplified completely.



$$x = 6$$

$$\text{hyp} = \text{leg} \sqrt{2}$$

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



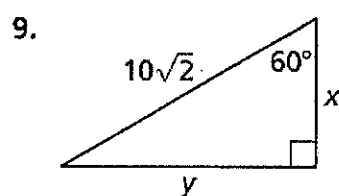
$$\text{LL} = \text{SL} \sqrt{3}$$

$$y = 8\sqrt{3}$$

$$\text{hyp} = 2 \cdot \text{SL}$$

$$x = 2(8)$$

$$x = 16$$



$$\text{hyp} = 2 \cdot \text{SL}$$

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

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

$$\text{LL} = \text{SL} \cdot \sqrt{3}$$

$$y = (5\sqrt{2})(\sqrt{3})$$

$$y = 5\sqrt{6}$$

Find the geometric mean of the two numbers. Give answers in exact (simplified completely) and approximate forms.

10. 6 and 12

$$\frac{6}{x} = \frac{x}{12}$$

$$x^2 = (6)(12)$$

$$x = \sqrt{2 \cdot 3 \cdot 3 \cdot 4}$$

$$x = 6\sqrt{2}$$

$$\approx 8.49$$

11. 15 and 20

$$\frac{15}{x} = \frac{x}{20}$$

$$x^2 = 15 \cdot 20$$

$$x = \sqrt{5 \cdot 3 \cdot 4 \cdot 5}$$

$$x = 10\sqrt{3}$$

$$\approx 17.32$$

$$x = 6\sqrt{13}$$

$$\approx 21.63$$

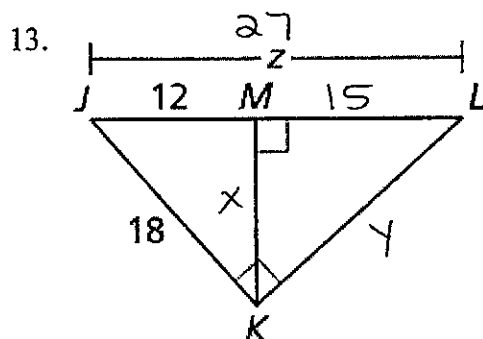
12. 18 and 26

$$\frac{18}{x} = \frac{x}{26}$$

$$\sqrt{x^2} = \sqrt{18 \cdot 26}$$

$$x = \sqrt{9 \cdot 2 \cdot 2 \cdot 13}$$

Write a similarity statement for the right triangles. Then, solve for the variable z and the lengths of segments $\overline{MK}$ and $\overline{LK}$. Give answers in exact (simplified completely) and approximate forms.



$$18^2 = (z)(12)$$

$$324 = 12z$$

$$\boxed{z = 27}$$

$$x^2 = (12)(15)$$

$$x = \sqrt{4 \cdot 3 \cdot 3 \cdot 5}$$

$$x = 6\sqrt{5}$$

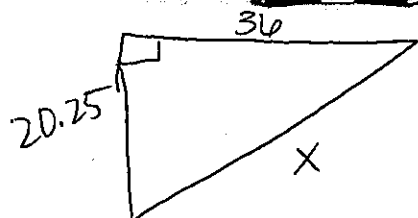
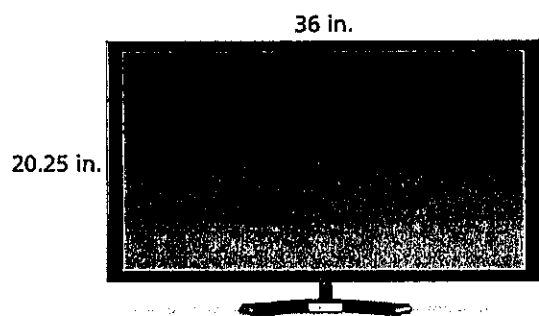
$$\boxed{MK = 6\sqrt{5}}$$

$$y^2 = (15)(27)$$

$$y = \sqrt{5 \cdot 3 \cdot 3 \cdot 9}$$

$$y = 9\sqrt{5} \rightarrow \boxed{LK = 9\sqrt{5}}$$

14. Television sizes are measured by the length of their diagonal. You want to purchase a television that is at least 40 inches. Should you purchase the television below? Explain your reasoning.



$$20.25^2 + 36^2 = x^2$$

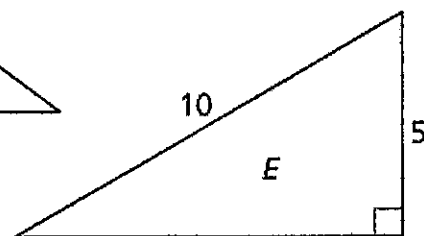
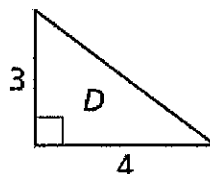
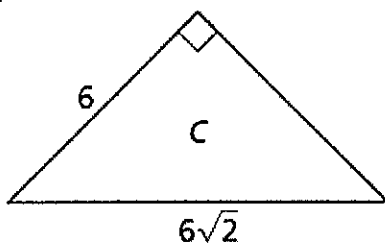
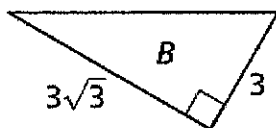
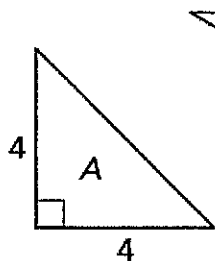
$$410.0625 + 1296 = x^2$$

$$1706.0625 = x^2$$

$$x \approx 41.305 \text{ inches}$$

yes, you should buy the TV
since the diag is > 40 inches

15. Each triangle shown below is a right triangle. Are any of these special right triangles? If so, which are 45-45-90 triangles? 30-60-90 triangles? Briefly explain how you know.



$\triangle A$ and $\triangle C$ are 45-45-90 $\triangle$ s

$\triangle B$ and $\triangle E$ are 30-60-90 $\triangle$ s