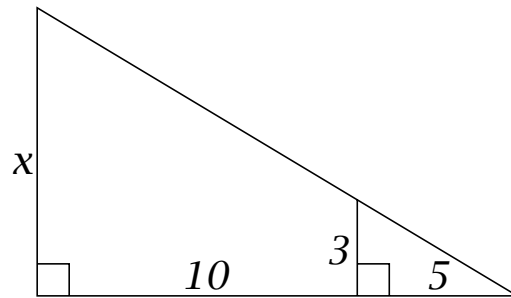


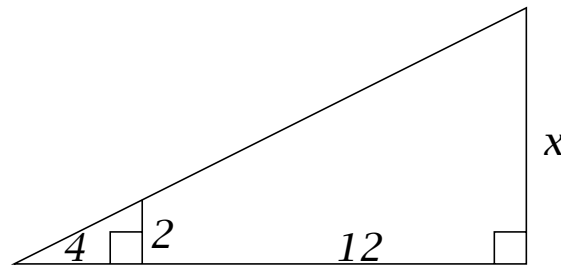
Exercise Set: Similar Triangles

(1) Find the value of x in the diagram: (Note that the length of the horizontal side of the largest triangle is 15)



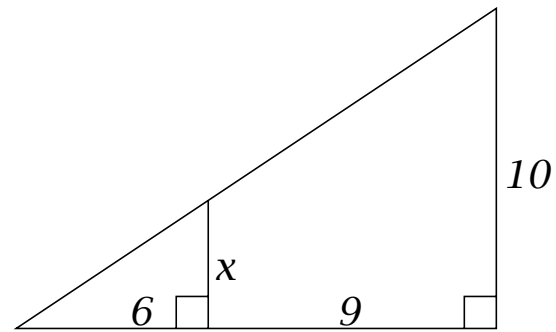
Solution

(2) Find the value of x in the diagram: (Note that the length of the horizontal side of the largest triangle is 16)



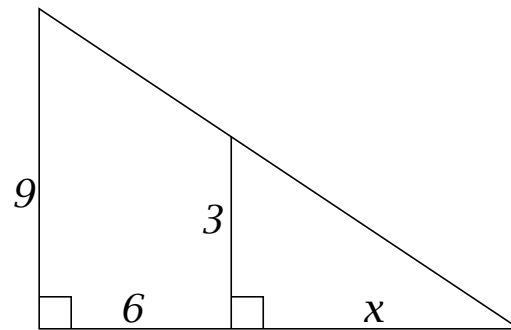
Solution

- (3)** Find the value of x in the diagram:(Note that the length of the horizontal side of the largest triangle is 15)



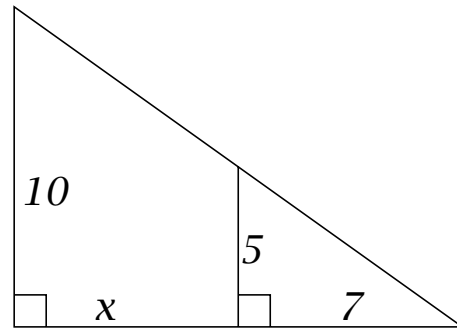
Solution

- (4)** Find the value of x in the diagram:(Note that the length of the horizontal side of the largest triangle is 15)



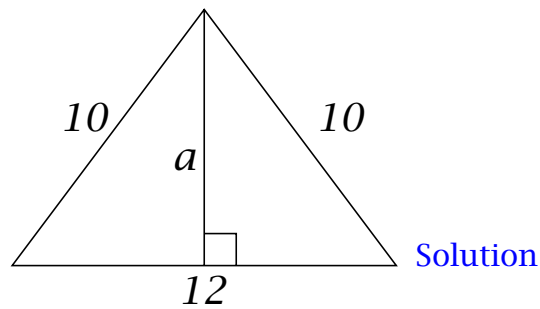
Solution

- (5)** Find the value of x in the diagram: (Note that the length of the horizontal side of the largest triangle is 14)



Solution

- (6)** Find the value of the perpendicular bisector a in the diagram of an isosceles triangle whose sides are 10, 10, and 12:



Solution

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Solution Set

(1) **Solution:**

We must have $\frac{x}{10+5} = \frac{3}{5}$, so $x = \frac{3}{5}(15) =$

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Solution Set

(1) **Solution:**

We must have $\frac{x}{10+5} = \frac{3}{5}$, so $x = \frac{3}{5}(15) = 9$

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(2) **Solution:**

We must have $\frac{x}{12+4} = \frac{2}{4}$, so $x = \frac{2}{4}16 =$

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(2) **Solution:**

We must have $\frac{x}{12+4} = \frac{2}{4}$, so $x = \frac{2}{4}16 = 8$

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(3) **Solution:**

We must have $\frac{x}{6} = \frac{10}{9+6} = \frac{10}{15} = \frac{2}{3}$, so $x = \frac{2}{3}6 =$

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(3) **Solution:**

We must have $\frac{x}{6} = \frac{10}{9+6} = \frac{10}{15} = \frac{2}{3}$, so $x = \frac{2}{3}6 = 4$

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(4) **Solution:**

We must have $\frac{x+6}{9} = \frac{x}{3}$, so

$\frac{x}{9} + \frac{6}{9} = \frac{x}{3}$, and thus

$$\frac{6}{9} = \frac{2}{3} = \frac{x}{3} - \frac{x}{9} = \frac{3x}{9} - \frac{x}{9} = \frac{2x}{9} = \frac{2}{9}x.$$

We now have $x = \frac{2 \cdot 9}{3 \cdot 2} =$

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(4) **Solution:**

We must have $\frac{x+6}{9} = \frac{x}{3}$, so

$\frac{x}{9} + \frac{6}{9} = \frac{x}{3}$, and thus

$$\frac{6}{9} = \frac{2}{3} = \frac{x}{3} - \frac{x}{9} = \frac{3x}{9} - \frac{x}{9} = \frac{2x}{9} = \frac{2}{9}x.$$

We now have $x = \frac{2 \cdot 9}{2} = 9$

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(5) **Solution:**

We must have $\frac{x+7}{10} = \frac{7}{5}$, so

$\frac{x}{10} + \frac{7}{10} = \frac{7}{5}$, and thus

$$\frac{x}{10} = \frac{7}{5} - \frac{7}{10} = \frac{7}{10}.$$

We now have $x = \frac{7}{10}10 =$

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(5) **Solution:**

We must have $\frac{x+7}{10} = \frac{7}{5}$, so

$\frac{x}{10} + \frac{7}{10} = \frac{7}{5}$, and thus

$$\frac{x}{10} = \frac{7}{5} - \frac{7}{10} = \frac{7}{10}.$$

We now have $x = \frac{7}{10}10 = 7$

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(6) **Solution:**

Noting that the base of the two congruent right-angled triangles with height a is 6, we have $6^2 + a^2 = 10^2$, so $a^2 = 100 - 36 = 64 = 8^2$, so $a =$

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(6) **Solution:**

Noting that the base of the two congruent right-angled triangles with height a is 6, we have $6^2 + a^2 = 10^2$, so $a^2 = 100 - 36 = 64 = 8^2$, so $a = 8$
