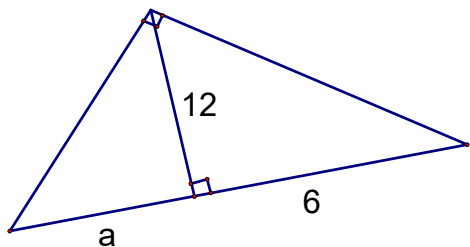


Geometry Honors  
9.3 More practice!

Name:

Solve for the variable in each altitude to the hypotenuse situation.

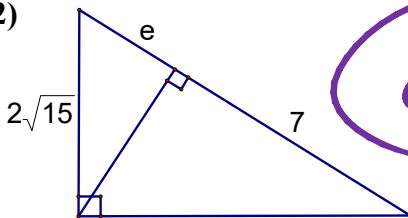
1)



$$12^2 = 6 \cdot a$$

$$a = 24$$

2)



$$e = 5$$

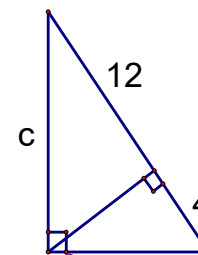
$$(2\sqrt{15})^2 = e(e+7)$$

$$4 \cdot 15 = e^2 + 7e$$

$$e^2 + 7e - 60 = 0$$

$$(e-5)(e+12) = 0$$

3)

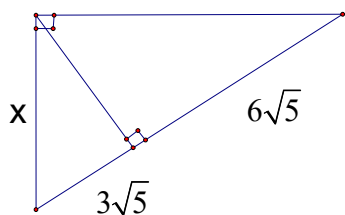


$$c^2 = 12 \cdot 16$$

$$c = \sqrt{4 \cdot 3 \cdot 4 \cdot 4}$$

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

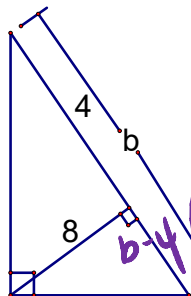
4)



$$x^2 = 3\sqrt{5} \cdot 9\sqrt{5}$$

$$x = 3\sqrt{15}$$

5)



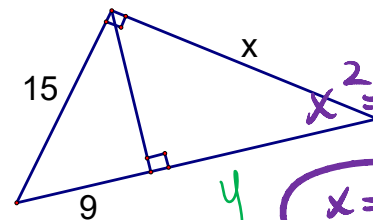
$$b = 20$$

$$4(b-4)$$

$$64 = 4b - 16$$

$$80 = 4b$$

6)



$$x^2 = 16 \cdot 25$$

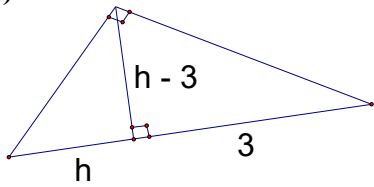
$$x = 20$$

$$15^2 = 9 \cdot (9+y)$$

$$225 = 81 + 9y$$

$$16 = y$$

7)



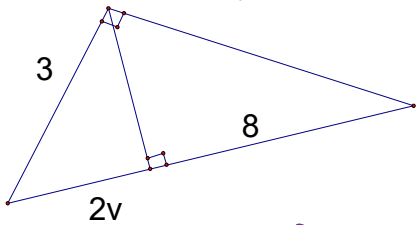
$$h^2 - 6h + 9 = 3h$$

$$h^2 - 9h + 9 = 0$$

$$h = \frac{9 \pm \sqrt{81 - 4 \cdot 9}}{2}$$

$$= \frac{9 \pm \sqrt{45}}{2} = \frac{9 + 3\sqrt{5}}{2}$$

9)



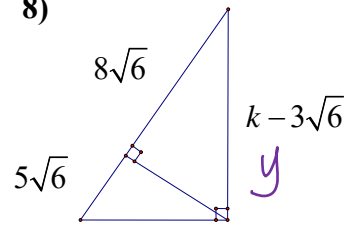
$$9 = 2v(2v + 8)$$

$$4v^2 + 16v - 9 = 0$$

$$(2v - 1)(2v + 9) = 0$$

$$v = \frac{1}{2}, \quad \cancel{\frac{9}{2}}$$

8)



$$y^2 = 8\sqrt{6} \cdot 13\sqrt{6}$$

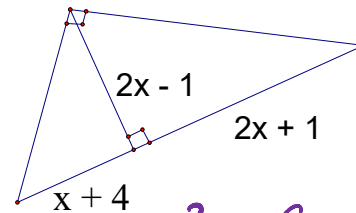
$$y = \sqrt{4 \cdot 2 \cdot 2 \cdot 3 \cdot 13}$$

$$= 4\sqrt{39}$$

$$k - 3\sqrt{6} = 4\sqrt{39}$$

$$k = 4\sqrt{39} + 3\sqrt{6}$$

10)



$$4x^2 - 4x + 1 = 2x^2 + 9x + 4$$

$$2x^2 - 13x - 3 = 0$$

$$x = \frac{13 \pm \sqrt{193}}{4}$$

ONLY  
⊕ case!