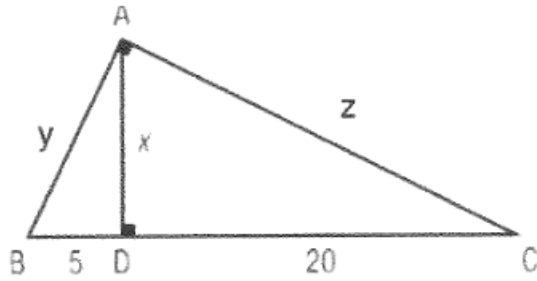


Metric Relations - Supplemental Questions with Solutions

Solve for x , y and z

1.



$$a^2 = mn$$

$$x = a$$

$$x^2 = (5)(20)$$

$$x^2 = 100$$

$$x = 10$$

Use pythagorean theorem:

$$(10)^2 + (20)^2 = z^2$$

$$100 + 400 = z^2$$

$$500 = z^2$$

$$22.36 = z$$

$$(l_1)^2 = mh$$

$$l_1 = y$$

$$m = 5$$

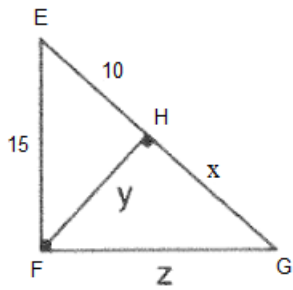
$$h = 25$$

$$y^2 = 5(25)$$

$$y^2 = 125$$

$$y = 11.18$$

2.



Use pythagorean to find y

$$(15)^2 = y^2 + (10)^2$$

$$225 = y^2 + 100$$

$$125 = y^2$$

$$11.18 = y$$

$$a^2 = mn$$

$$a = y$$

$$m = x$$

$$(11.18)^2 = x(10)$$

$$125 = x(10)$$

$$12.5 = x$$

Use pythagorean for z

$$(z)^2 = (12.5)^2 + (11.18)^2$$

$$(z)^2 = 156.25 + 125$$

$$(z)^2 = 281.25$$

$$z = 16.77$$