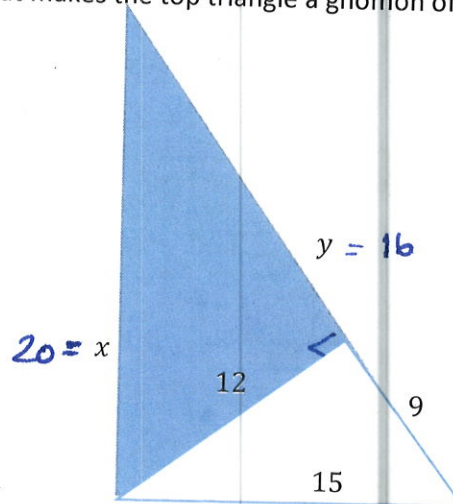


**Instructions:** Show all work. Use exact answers unless otherwise directed to round.

1. Find the values of  $x$  and  $y$  that makes the top triangle a gnomon of the smaller one.



$$\frac{12}{9} = \frac{x}{15}$$

$$180 = 9x$$

$$20 = x$$

$$\frac{12}{9} = \frac{y}{12}$$

$$9y = 144$$

$$y = 16$$

2. Madison County has a population of 34,522 people. The county hospital is interested in estimating the number of people in the county with blood type A<sup>-</sup>. To do this, they test blood from 253 patients. Of these, 17 have type A<sup>-</sup>. Use this to estimate the number of people in the county with A<sup>-</sup> blood.

$$\frac{17}{253} = \frac{x}{34,522}$$

$$253x = 586,874$$

$$x \approx 2319.66$$

around 2320 people have type A<sup>-</sup>.