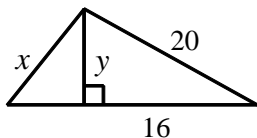


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P.I. G.G.45: Investigate, justify, and apply theorems about similar triangles

1. The two small triangles in the following figure are similar. Find the values of x and y to the nearest thousandth.



[A] $x = 12$, $y = 15$

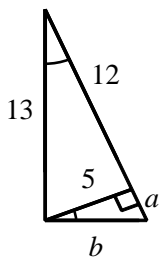
[B] $x = 15$, $y = 12$

[C] $x = 9.6$, $y = 12$

[D] $x = 32$, $y = 25.6$

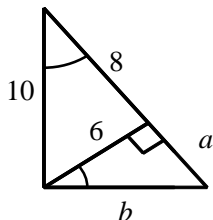
[E] none of the above

2. Solve for a and b .



[A] $a = \frac{25}{12}$, $b = \frac{65}{12}$ [B] $a = \frac{5}{12}$, $b = \frac{65}{12}$ [C] $a = \frac{25}{12}$, $b = \frac{5}{12}$ [D] $a = \frac{65}{12}$, $b = \frac{13}{12}$

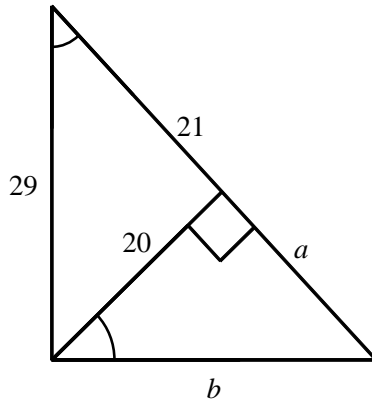
3. Solve for a and b .



[A] $a = \frac{3}{4}$, $b = \frac{15}{2}$ [B] $a = \frac{9}{2}$, $b = \frac{15}{2}$ [C] $a = \frac{15}{2}$, $b = \frac{5}{4}$ [D] $a = \frac{9}{2}$, $b = \frac{3}{4}$

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4. Solve for a and b .



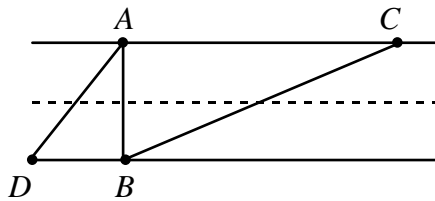
[A] $a = \frac{580}{21}$, $b = \frac{29}{21}$

[B] $a = \frac{400}{21}$, $b = \frac{20}{21}$

[C] $a = \frac{20}{21}$, $b = \frac{580}{21}$

[D] $a = \frac{400}{21}$, $b = \frac{580}{21}$

5. Refer to the figure below. James is standing at Point B and must cross the street to get to Point C . $\triangle BDA \sim \triangle ABC$. $DB = 5$ ft, $AB = 12$ ft, and $AD = 13$ ft. What is the distance from Point B to Point C ?



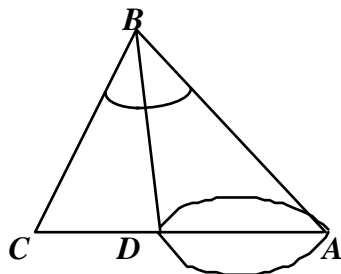
[A] 31.2 ft

[B] 30 ft

[C] 5.4 ft

[D] 4.6 ft

6. Describe how this figure could be used to find the width DA of the swamp. What calculations and measurements would you use?



[1] B

[2] A

[3] B

[4] D

[5] A

Answers may vary. Sample: measure

\overline{DC} , \overline{BC} and \overline{BA} . Then solve the proportion

$$\frac{AD}{BA} = \frac{CD}{BC} \text{ for } AD.$$

[6] _____