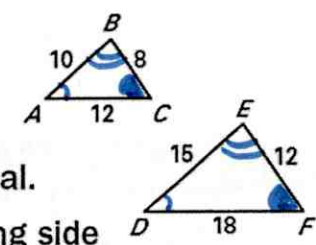


Use Similar Polygons

Vocabulary	Definition	Example
<p>SIMILAR POLYGONS</p>	<p>Two polygons are similar if <u>corresponding angles are congruent</u> and <u>corresponding side lengths are proportional</u>.</p> <p>Similarity Symbol:</p> <p style="text-align: center;">~</p> <p style="text-align: center;"><math>\triangle ABC \sim \triangle DEF</math></p>	<p>In the diagram, <math>\triangle ABC \sim \triangle DEF</math>.</p> <p>a. List all pairs of congruent angles.</p> <p>b. Check that the ratios of corresponding side lengths are equal.</p> <p>c. Write the ratios of the corresponding side lengths in a statement of proportionality.</p>  <p><b>Solution</b></p> <p>a. <math>\angle A \cong \angle D</math>, <math>\angle B \cong \angle E</math>, <math>\angle C \cong \angle F</math></p> <p>b. <math>\frac{AB}{DE} = \frac{10}{15} = \frac{2}{3}</math>     <math>\frac{BC}{EF} = \frac{8}{12} = \frac{2}{3}</math>  <math>\frac{CA}{FD} = \frac{12}{18} = \frac{2}{3}</math></p> <p>c. The ratios in part (b) are equal, so</p> <p style="text-align: center;"><math>\frac{AB}{DE} = \frac{BC}{EF} = \frac{CA}{FD}</math></p> <p style="text-align: right;">Scale factor of <math>\triangle ABC</math> to <math>\triangle DEF</math></p> <div style="border: 1px solid green; padding: 5px; width: fit-content; margin: auto;"> <math>\frac{2}{3}</math> </div>
<p>SCALE FACTOR of TWO SIMILAR POLYGONS</p>	<p>If two polygons are similar, then the ratio of the lengths of two corresponding sides is called the scale factor.</p>	<p>What is the scale factor of LMNP to FGHI?</p> <p style="text-align: center;"><math>\frac{LM}{FG} = \frac{12}{15} = \frac{4}{5}</math></p> <p>Find the value of x.</p> <p style="text-align: center;"><math>\frac{4}{5} = \frac{x}{40}</math></p> <p style="text-align: center;"><math>5x = 160</math></p> <div style="border: 1px solid blue; padding: 5px; width: fit-content; margin: auto;"> <math>x = 32</math> </div> 