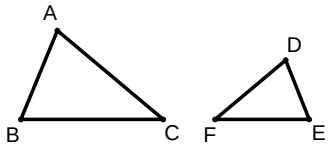
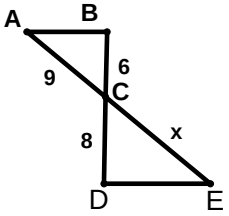
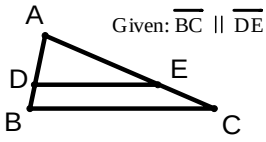
Geometry SOL Practice
Topic #8: Similar Triangles
Notes

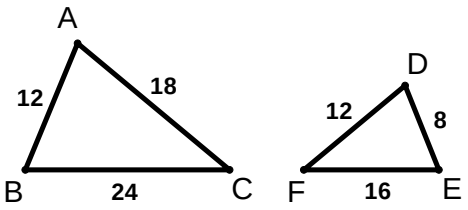
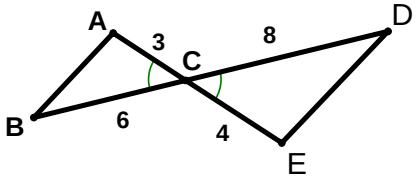
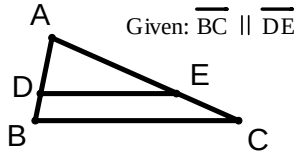
I. If triangles are similar, then corresponding sides are proportional.

General **Example**

<table>
<tr>
<td> 
</td>
<td>ΔABC ~ ΔDEF
$\frac{AB}{DE}=\frac{BC}{EF}=\frac{AC}{DF}$</td>
<td rowspan="2">Given: ΔABC ~ ΔEDC
Find x.
 
</td>
<td rowspan="2">Solution:
$\frac{BC}{DC}=\frac{AC}{EC}$
$\frac{6}{8}=\frac{9}{x}$
$6x=(9)(8)$
$6x=72$
$x=12$</td>
</tr>
<tr>
<td> 
</td>
<td>ΔABC ~ ΔADE
$\frac{AB}{AD}=\frac{BC}{DE}=\frac{AC}{AE}$</td>
</tr>
</table>

II. If one of the following conditions are met, then the triangles are similar.

Note: Compare corresponding sides as $\frac{small}{small}=\frac{middle}{middle}=\frac{big}{big}$

<table>
<tr>
<td>Side, Side, Side
All three pairs of corresponding sides are proportional.</td>
<td> 
</td>
<td>Corresponding Sides:
$\frac{12}{8}=\frac{18}{12}=\frac{24}{16}$
Reduced:
$\frac{3}{2}=\frac{3}{2}=\frac{3}{2}$
Decimal Form:
1.5 = 1.5 = 1.5</td>
</tr>
<tr>
<td>Side, Angle, Side
Two pairs of sides are proportional and the included angle is congruent.</td>
<td> 
</td>
<td>Corresponding Sides:
$\frac{3}{4}=\frac{6}{8}$
Included Angles:
$\angle ACB \cong \angle ECD$</td>
</tr>
<tr>
<td>Angle, Angle
Two pairs of corresponding angles are congruent.</td>
<td> 
</td>
<td>Corresponding Angles
(of || lines) are congruent.
$\angle ADE \cong \angle B$
$\angle AED \cong \angle C$</td>
</tr>
</table>