

Warm-up

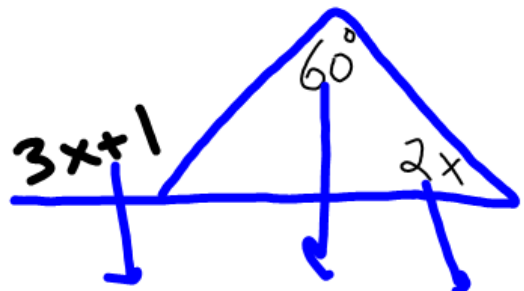
① Write the equation for the line through $(-1, -2)$ and \perp to $y = \frac{1}{3}x + 1$

$y = mx + b$

$y = -3x - 5$

$m = \frac{1}{3}$ $-2 = -3(-1) + b$
 $\perp m = -\frac{3}{1}$ $-2 = 3 + b$
 $-3 \quad -3$
 $-5 = b$

② Solve for x.



$3x + 1 = 60 + 2x$
 $-4 \quad -1 \quad -1 \quad -4$

$x = 59$

③ Classify by sides, then by angles.

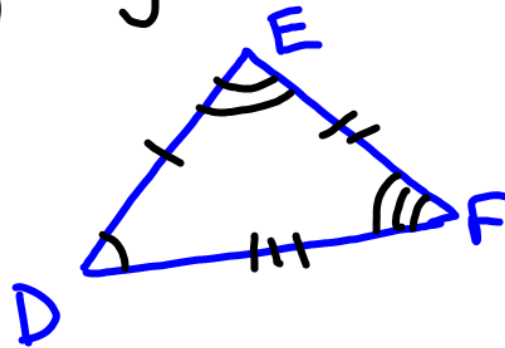
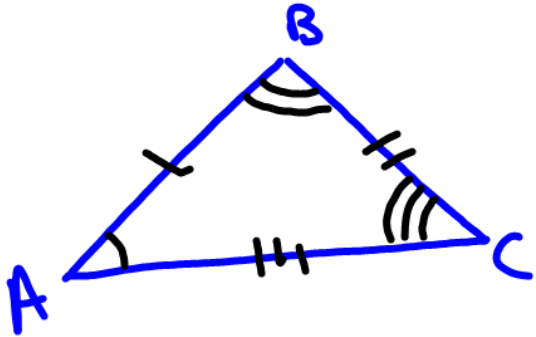


Isosceles
Obtuse

4.2 Congruence & Triangles

Congruent figures - When they are identical.

All corresponding angles & sides are = .



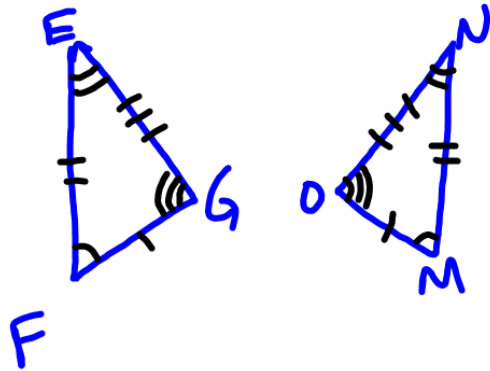
Corresponding Parts are:

$\angle A \cong \angle D$	$AB \cong DE$
$\angle B \cong \angle E$	$BC \cong EF$
$\angle C \cong \angle F$	$AC \cong DF$

So this means
 $\triangle ABC \cong \triangle DEF$
 or $\triangle BCA \cong \triangle EFD$

Example

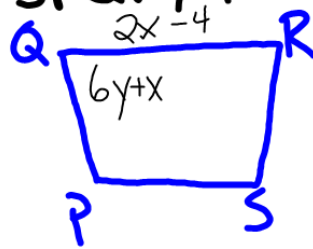
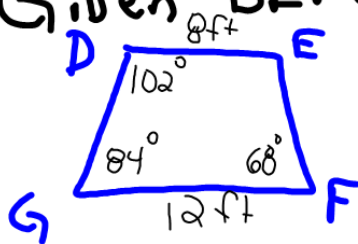
1) Name the corresponding parts (\angle 's & Sides)



$$\begin{array}{ll} \angle F \cong \angle M & \overline{GF} \cong \overline{OM} \\ \angle E \cong \angle N & \overline{FE} \cong \overline{MN} \\ \angle G \cong \angle O & \overline{GE} \cong \overline{ON} \end{array}$$

$$\triangle OMN \cong \triangle GFE$$

2) Given $DEFG \cong SPQR$, find x & y .



$$\begin{array}{l} \overline{QR} \cong \overline{GF} \\ \downarrow \qquad \downarrow \\ 2x-4 = 12 \\ \quad +4 \quad +4 \\ \hline 2x = 16 \\ \hline x = 8 \end{array}$$

$$\begin{array}{l} \angle Q \cong \angle F \\ \downarrow \qquad \downarrow \\ 6y+x = 68 \rightarrow x=8 \\ 6y+8 = 68 \\ 6y = 60 \\ \hline y = 10 \end{array}$$