

Write the equation of the line that passes through the two points (6, 1) and (2, 3)

$$\text{Slope} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{3 - 1}{2 - 6} = \frac{2}{-4} = -\frac{1}{2}$$

Point-Slope Form

$$y - y_1 = m(x - x_1)$$

$$y - 1 = -\frac{1}{2}(x - 6)$$

$$\text{or } y - 3 = -\frac{1}{2}(x - 2)$$

Slope-Intercept Form

$$y = mx + b$$

$$y - 1 = -\frac{1}{2}x + 3$$

$$y = -\frac{1}{2}x + 4$$

## Sec 4-1: Congruent Figures

Two figures that:

1. Have the same shape

and

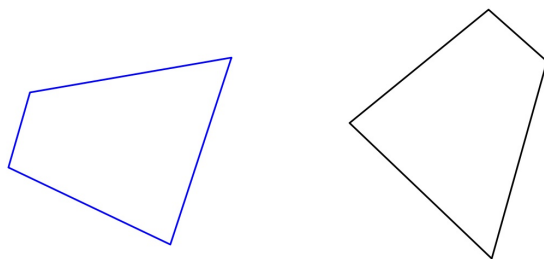
2. Have the same size

How could you show somebody that these two figures are congruent?

If one of the figures fits exactly onto the other by

- Sliding (translation)
- Turning (rotation)
- Flipping (reflection)

Or any combination of these



Same Shape:

Corresponding Angles are Congruent

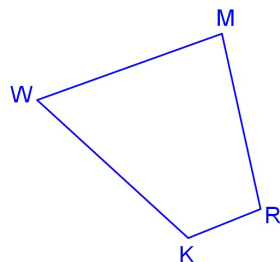
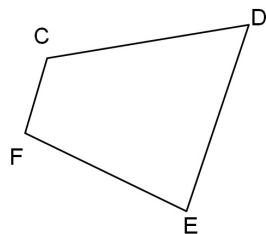
Same Size:

Corresponding Sides are Congruent

1. Name these congruent quadrilaterals.  $CDEF \cong KWMR$

2. W corresponds with D

3.  $\overline{DE}$  corresponds with  $\overline{WM}$



Given:  $NTX \cong HQF$

Name the corresponding parts:

1.  $N$  corr w/  $H$

2.  $\angle T \cong \angle Q$

$\angle N \cong \angle H$

3.  $\angle X \cong \angle F$

4.  $\overline{NT} \cong \overline{HQ}$

5.  $\overline{TX} \cong \overline{QF}$

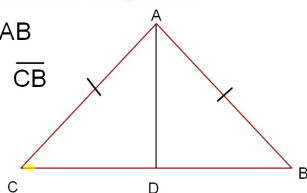
6.  $\overline{NX} \cong \overline{HF}$

To prove that two figures are congruent you need to show that all pairs of corresponding parts are congruent.

Given:  $\overline{AD}$  bisects  $\angle CAB$

$\overline{AD}$  is  $\perp$  bisector of  $\overline{CB}$

$\angle ACD \cong \angle ABD$



Prove:  $\triangle ADC \cong \triangle ABD$

S  $\overline{AC} \cong \overline{AB}$  Given (symbols on drawing)

S  $\overline{CD} \cong \overline{BD}$  (definition of bisector of a segment)

S  $\overline{AD} \cong \overline{AD}$  (Reflexive Property)

A  $\angle CDA \cong \angle BDA$  (All right angles are congruent: Perpendicular)

A  $\angle ACD \cong \angle ABD$  Given

A  $\angle CAD \cong \angle BAD$  (definition of angle bisector)