4.4 Congruence & Transformations
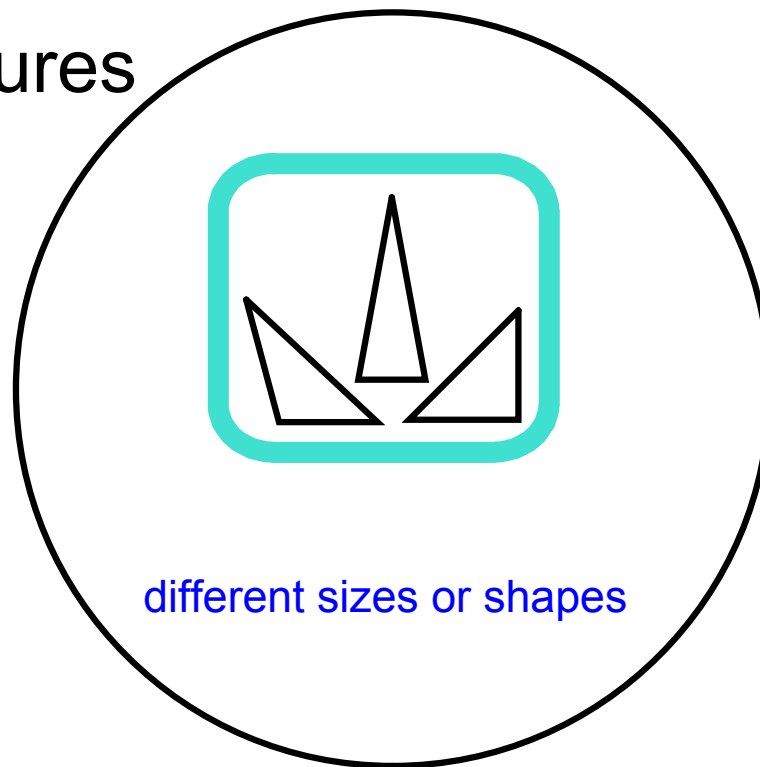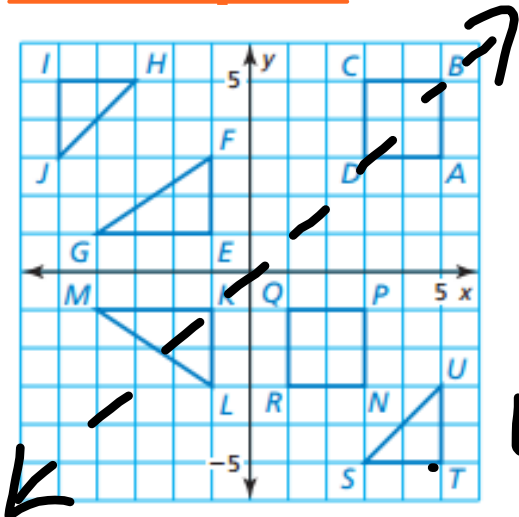
Congruent

NOT Congruent

Figures
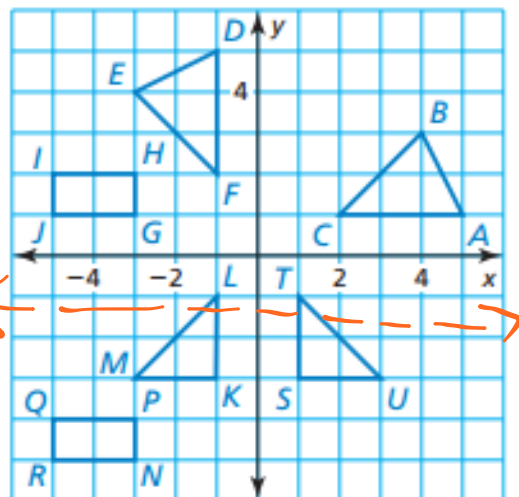
same size and shape

different sizes or shapes
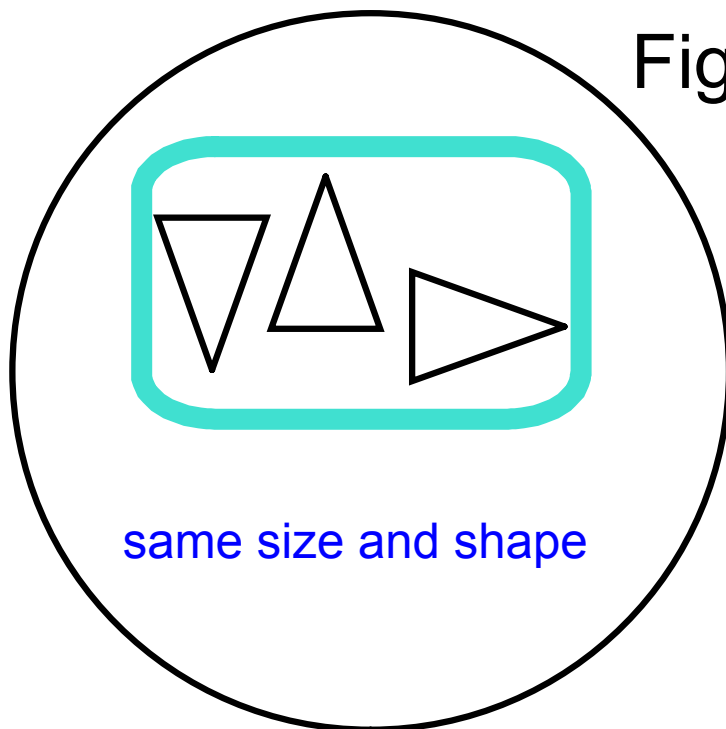
Example: Name congruent figures.

$\triangle IJH \cong \triangle TVS$ rotation 180

$\triangle IJH \cong \triangle TSU$ reflection y=x

$\triangle FEG \cong \triangle LKM$ Reflection x-axis

$\square CBAD \cong \square QPNR$ $(x,y) \rightarrow (x-2, y-6)$
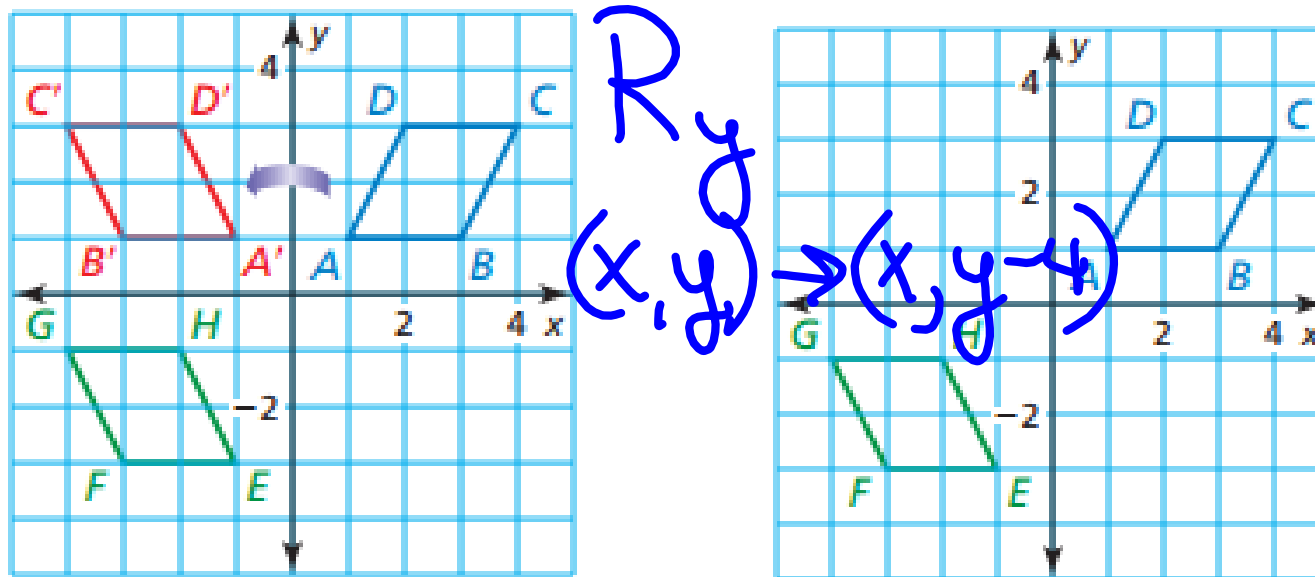
Practice: Name congruent figures.

$\triangle LKM \cong \triangle TSU$ reflected over y-axis

$\triangle CBA \cong \triangle FED$ rotation 90°

$\square IHGJ \cong \square QPNR$ $(x,y) \rightarrow (x+9, y-6)$
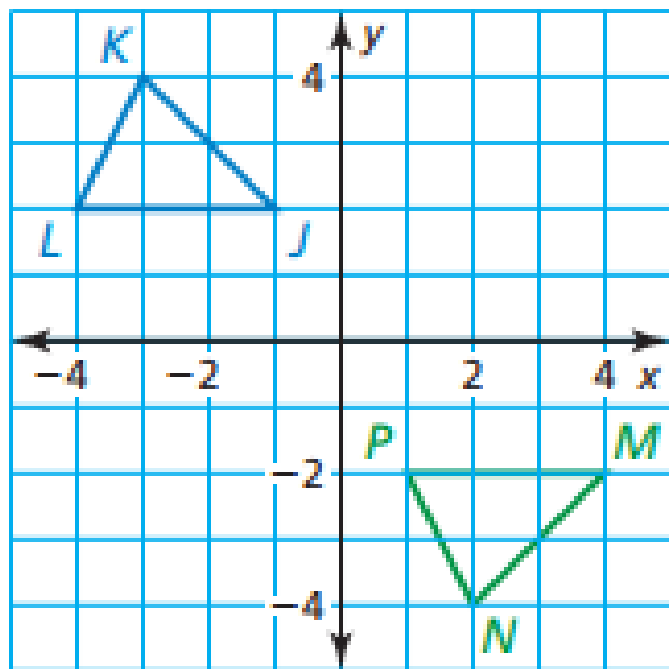
Congruence Transformations

Mapping how you get from one object to another object. Sometimes it can be a composition of transformations and sometimes it is one transformation. Multiple answers can be possible!

EXAMPLE: How do you get from Blue to Green?

$$R_y$$
$$(x,y) \rightarrow (x, y-4)$$

HINT: move graph to check

Practice: Go from blue to green again!

Reflect over x-axis

Translate $(x, y) \rightarrow$

$(x + 5, y + 0)$

ACT Practice:

At a buffet restaurant, the price for dinner for an adult is $6.95 and the price for dinner for a child is $3.95. A group of 8 people went to the restaurant for dinner and paid a total of $46.60, excluding tax and tip. How many adults were in the group?

A. 2

B. 3

C. 4

D. 5

E. 6

$a =$ adult

$c =$ child

$6.95a + 3.95c = 46.60$

$a + c = 8$

$c = 8 - a$

$6.95a + 3.95(8 - a) = 46.60$

$6.95a + 31.60 - 3.95a = 46.60$

$3a + 31.60 = 46.60$

$ -31.60 \quad 31.60$

$\dfrac{3a}{3} = \dfrac{15}{3}$

$a = 5$

HW: Pg. 204: 3, 5, 7, 17, 37 - 43