Review of the Problem with liars and truth tellers.

The knight always tells the truth, the knave always lies. Two people, Red and Blue, stand before you. Red says, "We are both knaves." What are they really?

Hint: Is Red a knight?

Solution:

The Red cannot be a knight. Knights always tell the truth, so if he were a knight, he would tell you so. Instead he says, "we are both knaves."

If the Red is a knave, then he must be a liar. This means they cannot both be knaves. So, since we've established that Red man is a knave and a liar, Blue must be a knight.

Solving the percent problems with the proportion method:

Remember: Percent (%) of Whole is "part"   and "Part" is percent (%) of Whole

100% is 1 (all of it)

Greater than 100% means more than all of it.

Less than 100% means less than all of it.

- 5.1 is what percent of 60? $5.1 = \frac{x}{100} \cdot 60$

Using a proportion, we have to find where the whole number is and where the part of it is. In this case the whole number is 60 and 5.1 *is* its part. Also 5.1 to 60 is at the same proportion (ratio) as its percentage to a 100

$$\frac{Part\ (is)}{Whole\ (of)} = \frac{percent}{100}$$

$$\frac{5.1}{60} = \frac{x}{100}$$

- 30 is 25% of what number? $30 = \frac{25}{100} \cdot x$

  Using a proportion, we have to think that 30 to an unknown number should be at the same proportion/ratio as 25 to 100

$$\frac{30}{x} = \frac{25}{100}$$

- What number is 13.4% of 17? $x = \frac{13.4}{100} \cdot 17$

  Using a proportion, we have to think that the unknown number should be at the same proportion/ratio to 17 as 13.4 to 100.

$$\frac{x}{17} = \frac{13.4}{100}$$

Geometry:

Figures in the plane can be rotated (turned), translated (slide) and reflected (flipped)

Rigid Motion: Any way of moving all the points in the plane such that

a) the distance between points stays the same and

b) the position of the points stays the same.

There are 4 types of Rigid Motion: Turns, Flips, Slide or Glide Reflection

**If one shape can become another using Rigid Motion, then the shapes are Congruent (symbol: $\cong$).**

Rotation   Turn!

Reflection   Flip!
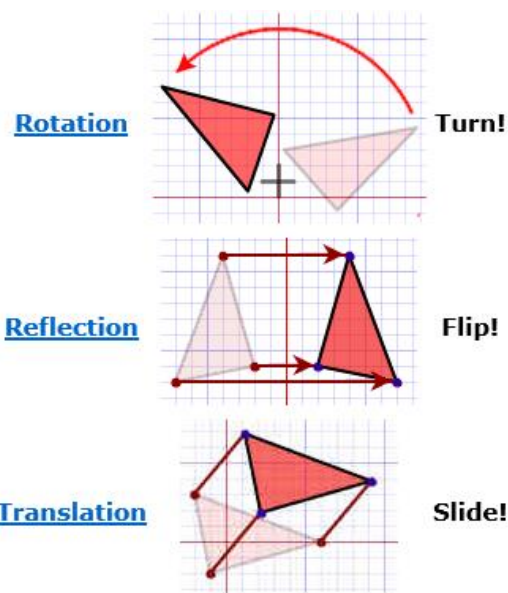
Translation   Slide!

Congruent figures **are figures that have exact**

same corresponding side lengths and angle measures

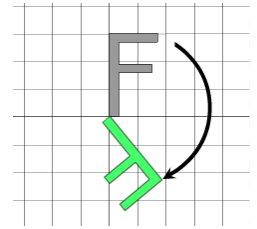# Two congruent figures are, basically, the same figures

Translation:

In a translation, everything is moved by the same amount and in the same direction. Every translation has a direction and a distance.
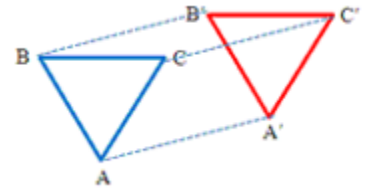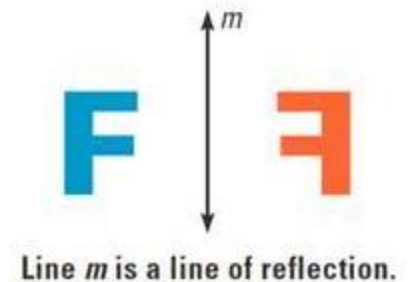
Rotation:

A rotation fixes one point and everything rotates by the same amount around that point. Every rotation has a rotocenter and an angle.

Reflection:

The image of each point is at the same distance from the mirror line as each point of the pre-image

Line *m* is a line of reflection.

Glide Reflection:

A glide reflection is a mirror reflection followed by a translation parallel to the mirror. Every glide reflection has a mirror line and translation distance.

before glide reflection

mirror line

after glide reflection
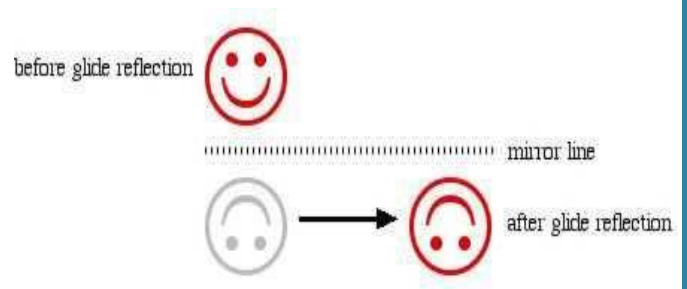
Similar Shapes are shapes with congruent corresponding angles and proportional corresponding sides

In geometry, similarity is a most important concept regarding triangles.

Two triangles are said to be similar when they have the same shape, but can have different size. Similar triangles have equal corresponding angles and proportional corresponding sides.

This proportion is known as similarity ratio