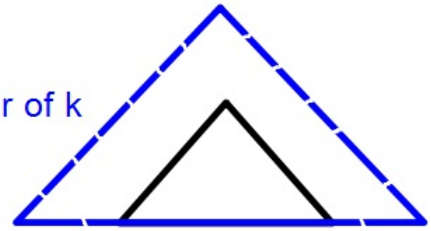
Triangles Unit Day 3 In Class Notes Name: _____ Period: _____

## Properties of Dilation

No these

1. Same shape, orientation, and angles
2. All sides change at the same rate by a factor of k
3. Corresponding slopes are parallel
4. Corresponding points are colinear with the center of the dilation



Pre-image Original

Image new after dilation

Notation for pre-image ABC

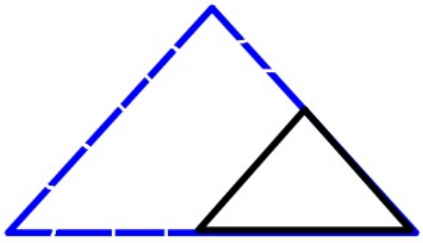
Notation for image A'B'C'

Scale factor k - the rate of change

Center of dilation start point of the dilation

$K = \frac{\text{Image}}{\text{Pre-image}}$ $\frac{\text{new}}{\text{old}}$

$D(x,y)=(kx, ky)$



Collinear points points on the same line

Corresponding points/sides same relative location

Enlargement k - scale factore k>1

Reduction k<1

Congruence k - 1, (congruent)

Similarity dilation is a similarity

Notation for similarity: QRS Q'R'S'

(Remember Triangle Congruency?
SSS, SAS, ASA, AAS
~~SSA~~, ~~AAA~~

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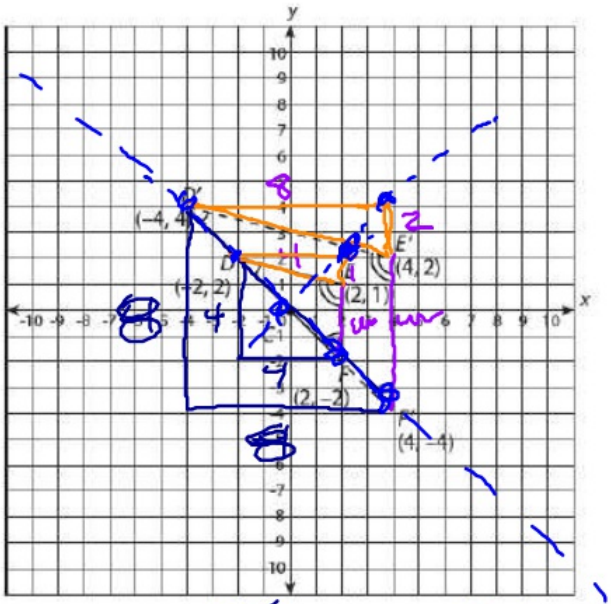
Example Problems:

1.)

Is the following transformation a dilation? Justify your answer using the properties of dilations.




Yes 1. Shape preserved (the same), Yes

Yes. 2. $\frac{D'F'}{DF} = \frac{8\sqrt{2}}{4\sqrt{2}} = \frac{2}{1}$ $\frac{E'F'}{EF} = \frac{6}{3} = \frac{2}{1}$ $\frac{D'E'}{DE} = \frac{\sqrt{68}}{\sqrt{17}} = \frac{2}{1}$ 2-K

Yes. 3. Parallel Slopes yes.

Yes. 4. Points are colinear.

Conclusion

Triangles are similar.

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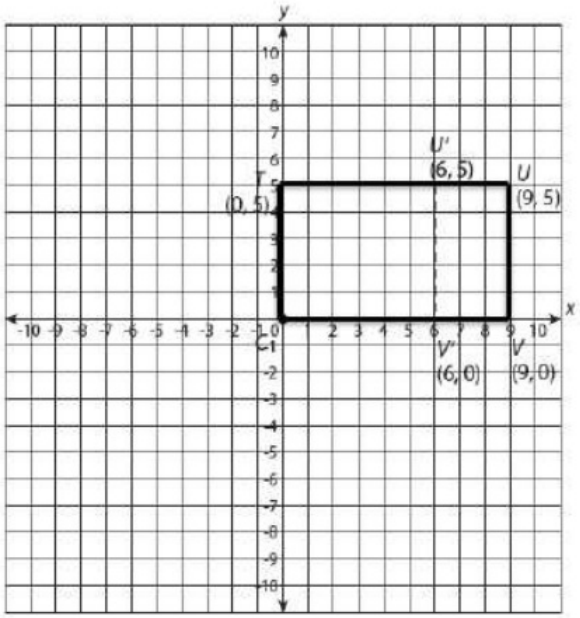
2.)

Is the following transformation a dilation? Justify your answer using the properties of dilations.




1.

2.

3.

4.

Conclusion