Module 1: Topic 2 Lesson 2 Assignment—Rising, Running, Stepping, Scaling

VOCABULARY----*For questions 1-2, complete the following sentences with the correct term. Use your book to help you.*	
1. A DILATION with a scale factor greater than 1 is an __enlargement__ 2. A DILATION with a scale factor between 0 and 1 is a __reduction__.	RATIO: NEW ─────── ORIGINAL

PRACTICE

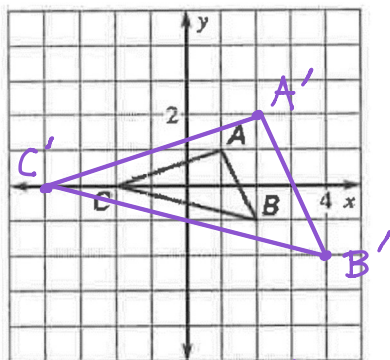Classify the following scale factors as Reductions or Enlargements or Neither.

$$3.5, \quad 2/5, \quad 1, \quad 4/3, \quad 0.6, \quad 5/8, \quad 7$$

REDUCTION	ENLARGEMENT	NEITHER
$2/5$, 0.6, $\frac{5}{8}$	3.5 , $4/3$, 7	1

For questions 1-3, **Dilate the triangle using the scale factor given and using the origin as the center of dilation.**
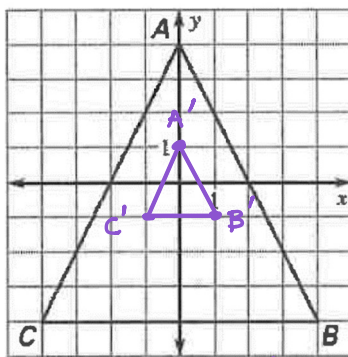
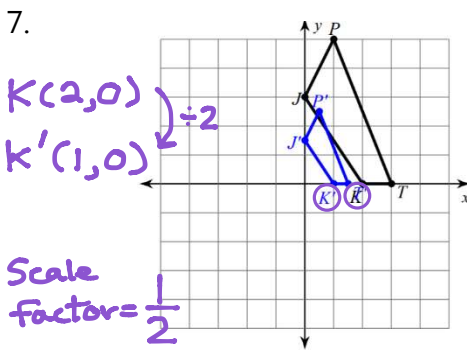| 1. k=2	2. k= 1/4	3. k=1/2
(ENLARGEMENT) or REDUCTION	ENLARGEMENT or (REDUCTION)	ENLARGEMENT or (REDUCTION)
A (1,1) ×2 A'(2,2) B (2,-1) → B'(4,-2) C (-2,0) C'(-4,0)	A(0,4) A'(0,1) B(4,-4) ÷4 B'(1,-1) C (-4,-4) C'(-1,-1)	A (4,4) A'(2,2) B (4,8) ÷2 B'(2,4) C (6,4) → C'(3,2) D (6,6) D'(3,3)
4. Determine the scale factor of the dilation. ×4 A (7, -3) ---> A' (28, -12) $\frac{28}{7} = 4$ Scale Factor: ____4____	5. Determine the scale factor of the dilation. ÷2 Z (0, 12) ---> Z' (0, 6) $\frac{6}{12} \to \frac{1}{2}$ Scale Factor: ____$\frac{1}{2}$____	6. Determine the scale factor of the dilation. ×$\frac{3}{2}$ A (-12, 4) ---> A' (-18, 6) $\frac{6}{4} = \frac{3}{2}$ Scale Factor: ____$\frac{3}{2}$____
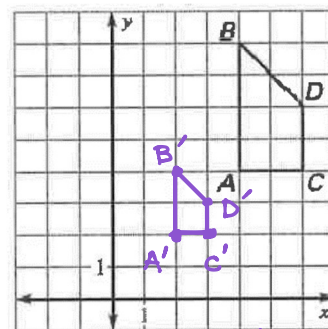
Given the following images, determine the scale factor used to graph the coordinates.

7.	8.	9.

7.

$K(2,0)$ ⎫÷2
$K'(1,0)$ ⎭

Scale
Factor = $\frac{1}{2}$

8.

$P(-4,4)$

$P'(-1,1)$

Scale
Factor = $\frac{1}{4}$

9.

$W(0,-2)$
$W'(0,-3)$

Scale factor
$\frac{3}{2}$

10.
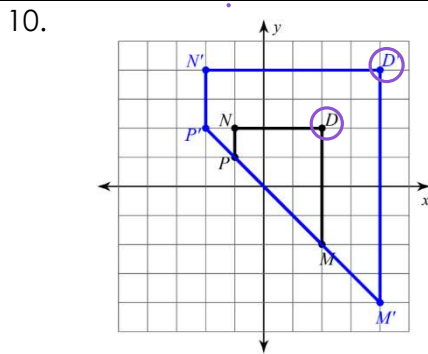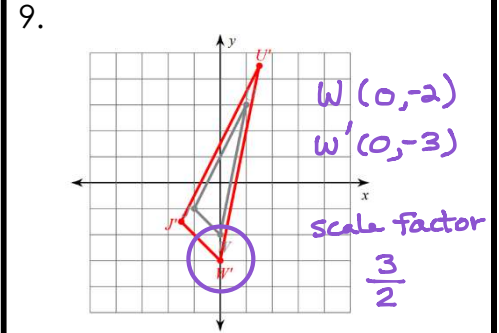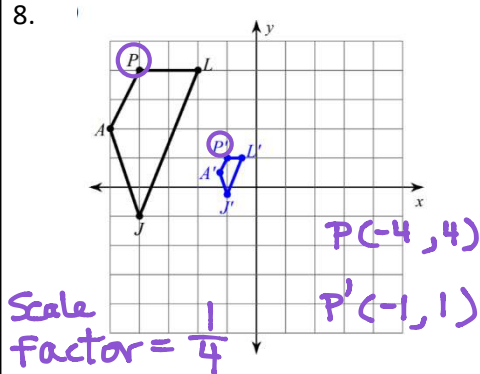
a. Are these two figures congruent? How do you know?

Not congruent. They are not the same size.

b. Are these two figures similar? How do you know?

Yes similar. They only have the same shape, different size.

c. Describe the Dilation that occurred to map quadrilateral DMNP onto quadrilateral D'M'N'F'.

$D(2,2) \rightarrow D'(4,4)$ Dilated by a scale factor of 2.
×2

11a. Dilate Δ ABC by a scale factor of 1/3.

÷3

Pre-Image	Image
A (6, -3)	A'(2,-1)
B (9, 5)	B'(3, $\frac{5}{3}$)
C (5, 6)	C'($\frac{5}{3}$, 2)

Rule: $(x,y) \rightarrow (\frac{x}{3}, \frac{y}{3})$

b. Dilate Δ ABC by a scale factor of 7.

×7

Pre-Image	Image
A (6, -3)	A'(42,-21)
B (8, 1)	B'(56,7)
C (-4, 9)	C'(-28,63)

Rule: $(x,y) \rightarrow (7x, 7y)$

c. Dilate Δ ABC by a scale factor of 2/3.

×2, ÷3

Pre-Image	Image
A (6, -3)	A'(4,-2)
B (12, 9)	B'(8,6)
C (3, -15)	C'(2,-10)

Rule: $(x,y) \rightarrow (\frac{2x}{3}, \frac{2y}{3})$

b. Dilate Δ ABC by a scale factor of 4.

×4

Pre-Image	Image
A (6, -1)	A'(24,-4)
B (7, -5)	B'(28,-20)
C (5, 2)	C'(20,8)

Rule: $(x,y) \rightarrow (4x, 4y)$

REVIEW

12. A line segment is dilated with center of dilation at the origin. If **UE= 12cm** and **U'E' = 10 cm**, what is the scale factor?

$\frac{new}{original} = \frac{U'E'}{UE} = \frac{10}{12}$

$= \boxed{\frac{5}{6}}$

13. What are the coordinates of the image if the quadrilateral is translated 4 units to the right and 3 units down.

+4   -3

Pre-Image	Image
A (-6, 2)	A'(-2,-1)
B (-5, 3)	B'(-1,0)
C (7, 3)	C'(11,0)
D (0, -4)	D'(4,-7)

RULE: (x, y)------> ($x+4$, $y-3$)