Geometry Honors
Unit 3: Similar Figures and Dilation
Unit 3 Test Review

Mathematician: _____
Period:_____

Target 1: Use proportions to identify lengths of corresponding parts in similar figures.

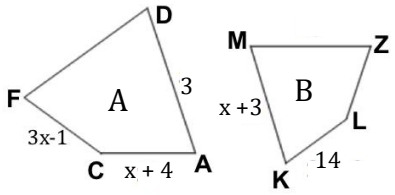
Directions: Which of the following triangle measurements represents a triangle similar to one with the measurements given?

1) 14 cm, 8 cm, 5 cm

A) 112 cm, 64 cm, and 40 cm
B) 30.8 cm, 17.6 cm, and 12.1 cm
C) 49 cm, 28 cm, and 15 cm
D) 28 cm, 16 cm, and 10 cm
E) 7 cm, 4 cm, and 2.5 cm

Directions: Find the scale factor from A to B given that $\Delta ACFD \sim \Delta KLZM$

2)



x = _____ k = _____

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3) The lengths of the sides of a triangle have the ratio 5:12:21. If the perimeter of the triangle is 266 meters, what is the length of the smallest side?

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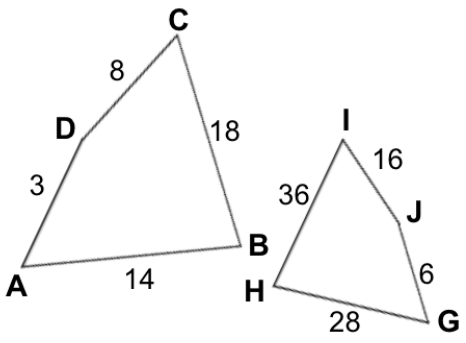
4) Using the figure, choose any correct statement.



A) $ABCD \sim GHIJ$
B) Corresponding sides of ratio of 1:3
C) $ADBC \sim GJHI$
D) $\frac{AB}{BI} = \frac{7}{18}$
E) $\frac{IJ}{CD} = \frac{16}{8}$
F) $\frac{DA}{JG} = \frac{1}{2}$

Target 2: Perform and identify dilations.

Directions: Give real-life examples of dilations (enlargement and reduction).

5) _____

6) _____

7) Classify the type(enlargement or reduction)of dilation and calculate the scale factor of the paintings?

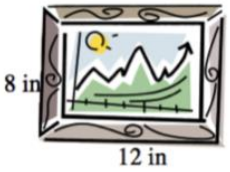
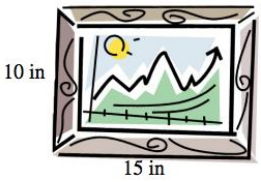
Pre-Image: 

Image: 

Linear Scale Factor: _____

8) Dilate the point (0,3) by a scale factor of 1.5
Find the sum of the image coordinate.

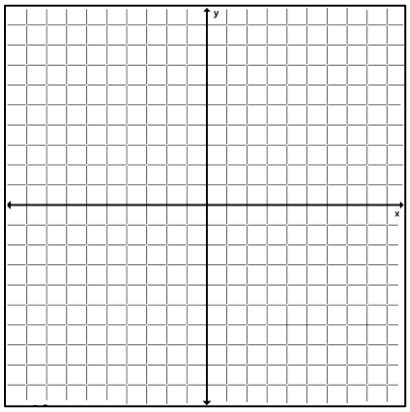
x – coord: _____ y – coord: _____

Sum: _____

9) Triangle KLM was dilated to form triangle $K'L'M'$.
If $\frac{K'L'}{KL} = \frac{3}{4}$ then $\frac{MK}{M'K'} = ?$

Answer: _____

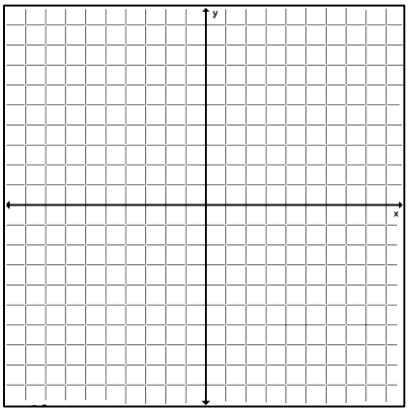
10) Graph the dilation of $\overline{AB}$ by a scale factor of 2 centered at the point (-3,4).
A(1,5) and B(-2,-3).
Find the coordinate of the image of B and then find the sum of the image coordinates.



A': _____ B': _____

B' Sum: _____

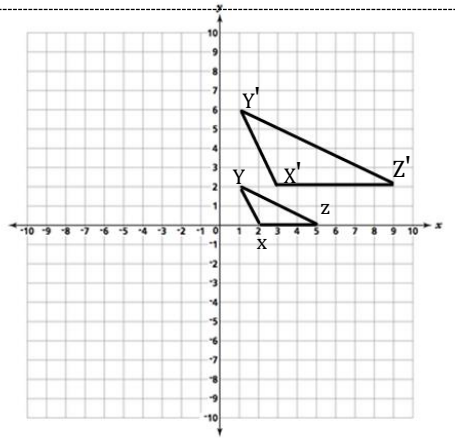
11) Graph the dilation of $\overline{AB}$ by a scale factor of $\frac{1}{4}$ centered at the origin.
A(-4,8) and B(-8,4).
Find the coordinate of the image of A and then find the sum of the image coordinates.



A': _____ B': _____

A' Sum: _____

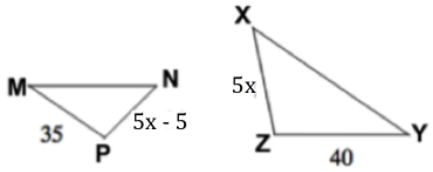
12) Using the diagram to the right, write the rule of the dilation.



Target 3: Use ratios of lengths, perimeter, and area to determine unknown corresponding parts.

Directions: Solve for x. Then find the length of the indicated side.

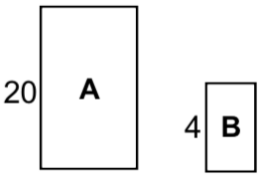
13) $\Delta MNP \sim \Delta XYZ$



x = _____ PN = _____

Directions: Find the missing values for each pair of similar figures.

14)

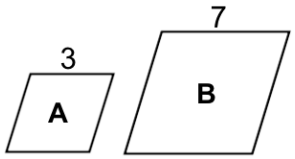


Perimeter of B = 11 ft Area of A = 150ft^2

Linear Scale Factor	Ratio of the Areas

Perimeter of A: _____ Area of B: _____

15)



Area of B = 294 m^2 Perimeter of A = 28 m,

Linear Scale Factor	Ratio of the Areas

Area of A: _____ Perimeter of B: _____

Directions: Find the indicated length, perimeter or area, given that the two figures are similar.

16) The ratio of the perimeters of two triangles is 1:4. If the area of the larger triangle is 96, what is the area of the smaller triangle?

Linear Scale Factor	Ratio of the Areas

Area of Smaller Triangle: _____

17) The ratio of the areas of two squares is 49:100. If the perimeter of the smaller square is 56, what is the side length of the larger square?

Linear Scale Factor	Ratio of the Areas

Perimeter =_____

Side Length = _____

18) The ratio of the circumferences of two circles is 2:5. If the area of the larger circle is 88, what is the area of the smaller circle?

Linear Scale Factor	Ratio of the Areas

Area of Smaller Circle: _____

Target 4: Perform compositions of figures to determine the coordinates and location of the image.

Directions: Determine the coordinates of point P' after the indicated glide reflection.

19) P(12,-9) is translated -3 units horizontally and dilated by a factor of $\frac{1}{3}$ centered at the origin.

P': _____

P'': _____

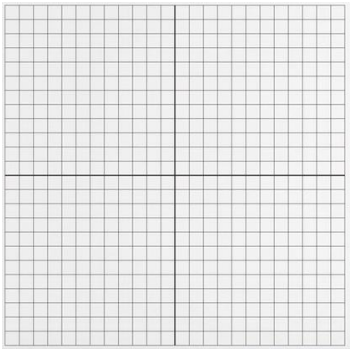
20) P(7,1) is dilated by a factor of 2 units centered at the origin and is rotated 90° clockwise about the origin.

P': _____

P'': _____

Directions: The endpoints of $\overline{CD}$ are C(1, 4) and D(-2, 0). Graph $\overline{CD}$. Give the coordinate of C'D' and C''D''. Then graph image of $\overline{CD}$.

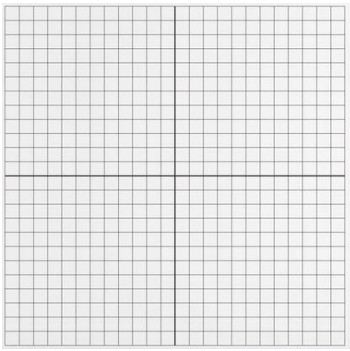
21) Transformation #1: Rotate 90° CCW around the point (3,2)
Transformation #2: Dilate by a factor of $\frac{1}{2}$



C' C''

D' D''

22) Transformation #1: Dilate by a factor of 2 centered at the origin.
Transformation #2: Translate $(x, y) \rightarrow (x - 3, y - 2)$

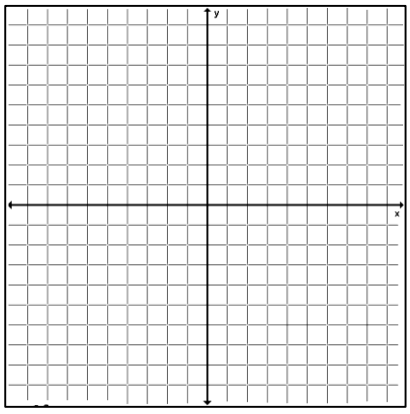


C' C''

D' D''

23) POINT A(6, -4)

Dilate by factor of $\frac{1}{2}$ centered at the point (-4,2).
Then translate by the rule
$(x, y) \rightarrow (x + a, y + b)$
If A'' (-2,5), find a, b, and their sum.

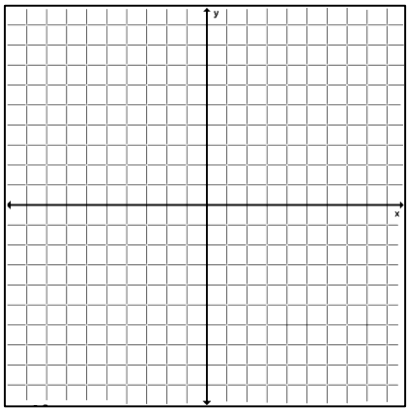


a: _____ b: _____

SUM = _____

24) POINT A(-1, 3)

Rotate 90° CCW around the point (2,-1).
Dilate by factor of 3 centered at the point (-4,-7).
Find the sum of image coordinates.

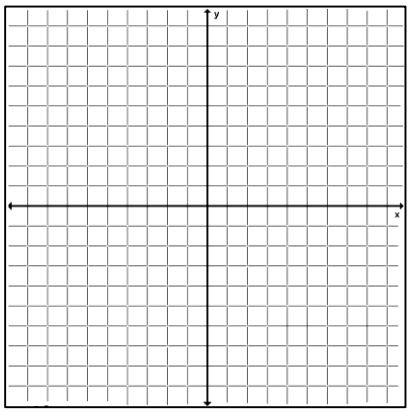


A': _____ A": _____

SUM A"= _____

25) POINT A(3, 9)

Reflect over the y-axis.
Dilate by a factor of $\frac{1}{3}$ centered at the point (6,-3).
Find the sum of image coordinates.



A': _____ A": _____

SUM A"= _____