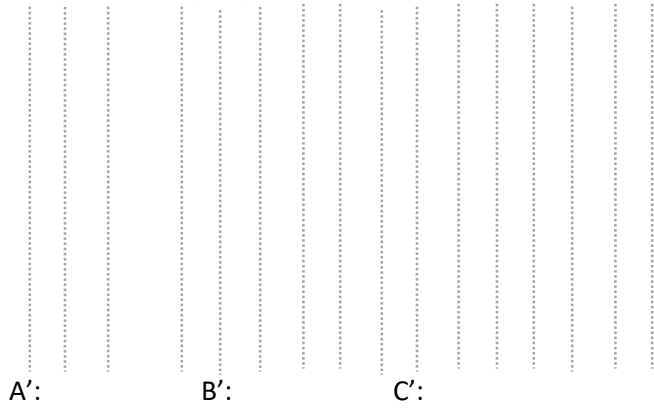
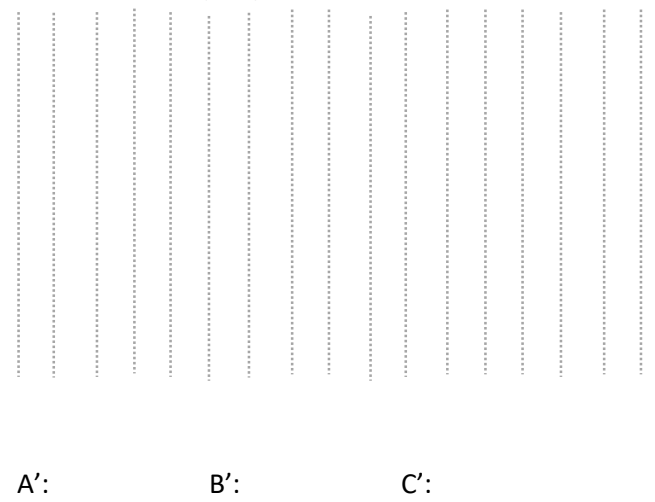


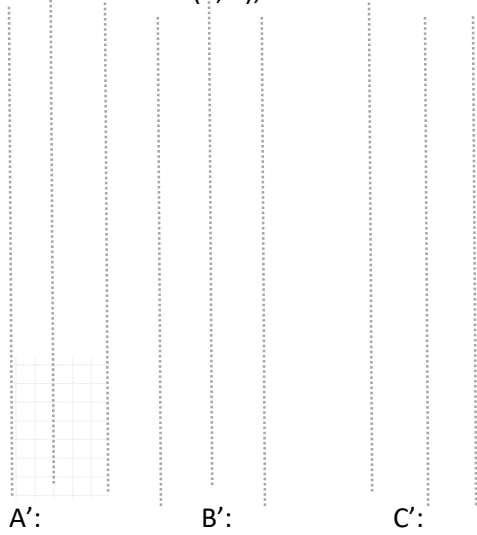
1. Center (0, 0); scale factor 3



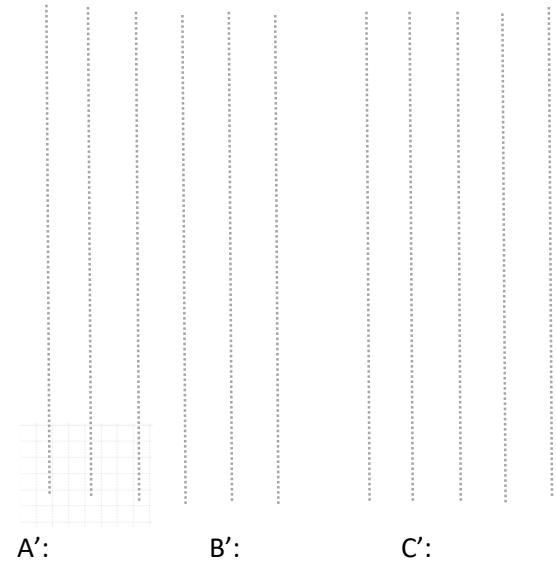
2. Center (0, 0): scale factor 2



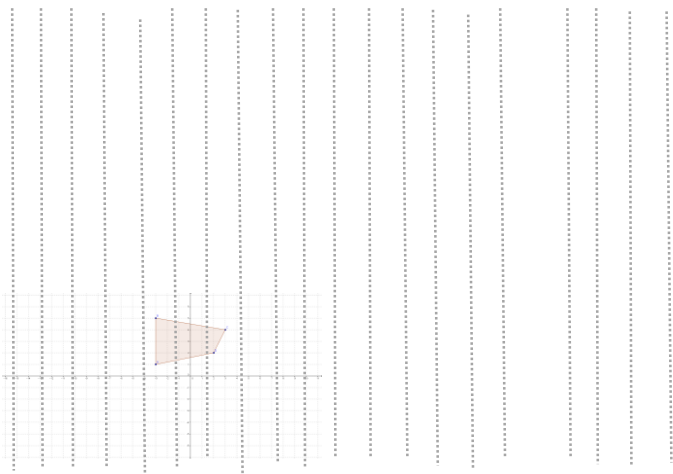
3. Center (0, 0); scale factor  $\frac{1}{2}$



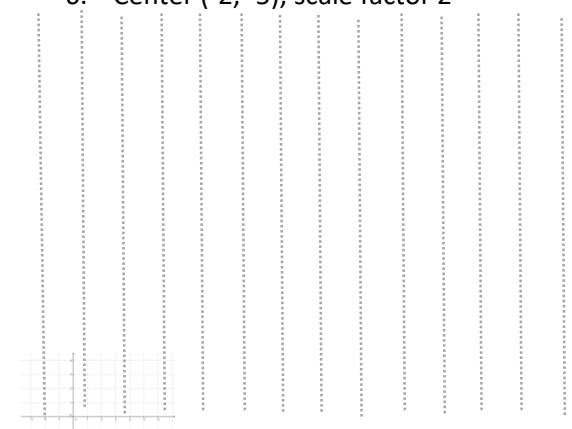
4. Center (4, -1); scale factor 2



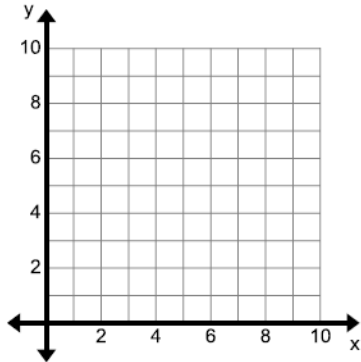
5. Center (3, 5); scale factor 3



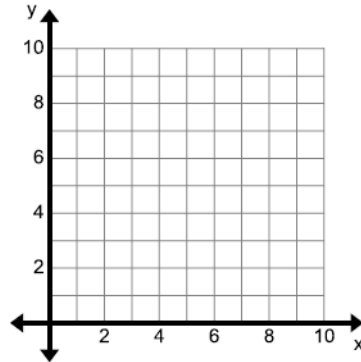
6. Center (-2, -5); scale factor 2



7. Graph the pre-image with the given vertices J (2, 4), K (4, 4), and P(3, 2). Then graph the image with center of dilation at the origin and a scale factor of 2.



8. Graph the pre-image with the given vertices J (2, 4), K (4, 4), and P(3, 2). Then graph the image with center of dilation at the origin and a scale factor of  $\frac{1}{2}$ .



Determine whether each statement is true or false.

9. A dilation with a scale factor greater than 1 will shrink the image.
10. A dilation image cannot have any points in common with its pre-image.
11. For dilation, corresponding angles of the image and pre-image are congruent.
12. A dilation preserves length.

Review:

Simplify

13.  $(3x^2 - 4xy + 6y^2) - (x^2 - 3x + 3y^2)$

14.  $(10x^2 - 2xy + 5y^2) - (3x^2 - 1x + 9y^2)$

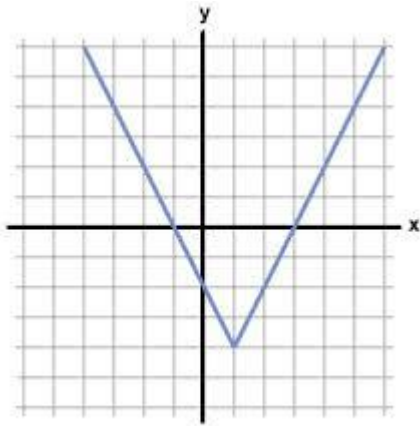
15.  $(3x^3 - 4x + 6x^2) - (x^2 - 3x + 3x^4)$

16.  $(2x + 1)(5x^2 - 3x + 2)$

17.  $(3x^2 - 2x)(x^2 - 3x - 1)$

18.  $(3x - 2)^2$

19. On what interval is the function increasing? \_\_\_\_\_  
 On what interval is the function decreasing? \_\_\_\_\_  
 Where is the function positive? \_\_\_\_\_  
 Where is the function negative? \_\_\_\_\_



20. Does this function have a max or min? \_\_\_\_\_  
 Identify the vertex. \_\_\_\_\_  
 Find the zeros. \_\_\_\_\_  
 Find the average rate of change on the interval  $[2, 4]$ . \_\_\_\_\_

