

Name _____ Mr. Schlansky

Date _____ Geometry

Line Dilations Practice

1. The line y = 3x - 2 is dilated by a scale factor of 2 and centered at the origin. Write an equation that represents the image of the line after the dilation.

- 1) y = 3x 22) y = 3x - 4
- 3) y = 6x 2
- 4) y = 6x 4

2. The line y = 3x - 2 is dilated by a scale factor of 2 and centered at (-1,-5). Write an equation that represents the image of the line after the dilation.

- 1) y = 3x 2
- 2) y = 3x 4
- 3) y = 6x 2
- 4) y = 6x 4

3. The line $y = -\frac{1}{2}x + 6$ is dilated by a scale factor of 4 and centered at (2,5). Write an equation that represents the image of the line after the dilation.

1)
$$y = -\frac{1}{2}x + 6$$

2) $y = -\frac{1}{2}x + 24$
3) $y = -2x + 6$
4) $y = -2x + 24$

4. The line $y = -\frac{1}{2}x + 6$ is dilated by a scale factor of 4 and centered at the origin. Write an equation that represents the image of the line after the dilation.

1)
$$y = -\frac{1}{2}x + 6$$

2) $y = -\frac{1}{2}x + 24$
3) $y = -2x + 6$
4) $y = -2x + 24$

5. Line y = 3x - 1 is transformed by a dilation with a scale factor of 2 and centered at (3, 8). The line's image is

- 1) y = 3x 8
- 2) y = 3x 4
- 3) y = 3x 2
- $4) \quad y = 3x 1$

6. The line y = 2x - 4 is dilated by a scale factor of $\frac{3}{2}$ and centered at the origin. Which equation represents the image of the line after the dilation?

- 1) y = 2x 4
- $2) \quad y = 2x 6$
- 3) y = 3x 4
- 4) y = 3x 6

7. Line *MN* is dilated by a scale factor of 2 centered at the origin. If *MN* is represented by y = -3x + 6, which equation can represent $\overleftarrow{M'N'}$, the image of $\overleftarrow{MN?}$

- 1) y = -3x + 12
- $2) \quad y = -3x + 6$
- $3) \quad y = -6x + 12$
- 4) y = -6x + 6

8. Line *MN* is dilated by a scale factor of 2 centered at the point (0, 6). If \overrightarrow{MN} is represented by y = -3x + 6, which equation can represent $\overrightarrow{M'N'}$, the image of $\overrightarrow{MN'}$? 1) y = -3x + 122) y = -3x + 63) y = -6x + 12

4) y = -6x + 6

9. The line y = 4x - 2 is dilated by a scale factor of 3 and centered at the point (-1,-6). Which equation represents the image of the line after the dilation?

1) y = 4x - 22) y = 4x - 63) y = 12x - 24) y = 12x - 6

10. The line $y = \frac{1}{2}x + 5$ is dilated by a scale factor of 4 and centered at the point (4,7). Which equation represents the image of the line after the dilation?

1)
$$y = \frac{1}{2}x + 20$$

2) $y = \frac{1}{2}x + 5$
3) $y = 2x + 20$
4) $y = 2x + 5$

11. The equation of line *h* is 2x + y = 1. Line *m* is the image of line *h* after a dilation of scale factor 4 with respect to the origin. What is the equation of the line *m*?

- 1) y = -2x + 12) y = -2x + 4
- 2) y = 2x + 43) y = 2x + 4
- (4) y = 2x + 1
- 4) y = 2x + 1

12. The line 2x + 3y = 8 is dilated by a scale factor of 3 and centered at the point (1,2). Which equation represents the image of the line after the dilation?

1)
$$y = -\frac{2}{3}x + \frac{8}{3}$$

2) $y = -\frac{2}{3}x + 8$
3) $y = -2x + \frac{8}{3}$
4) $y = -2x + 8$

13. Line y-2x=4 is transformed by a dilation with a scale factor of 2 centered at the origin. What is the equation of the line's image?

14. The equation of a line is given by the equation 2x + 2y = 6. Write an equation for the image of the line after a dilation of 2 centered at (3,0).

15. The equation of line *l* is y + 2x = 1. Line *m* is the image of line *l* after a dilation of 3 centered at the origin. What is the equation of line *m*.

16. The line y = 2x - 1 is dilated centered at (4,1). Which linear equation could be its image?

1) y = -2x + 3	3) $y = -\frac{1}{2}x - 4$
2) $y = 2x + 7$	$4) y = \frac{1}{2}x$

17. The line $y = \frac{2}{3}x + 3$ is dilated centered at the origin. Which linear equation could be its image?

1) $2x + 3y = 7$	3) $3x - 2y = 7$
2) $2x - 3y = 7$	4) $3x + 2y = 7$

18. The line 3y = -2x + 8 is transformed by a dilation centered at the origin. Which linear equation could be its image?

- 1) 2x + 3y = 5
- $2) \quad 2x 3y = 5$
- $3) \quad 3x + 2y = 5$
- $4) \quad 3x 2y = 5$

19. The line represented by the equation 4y = 3x + 7 is transformed by a dilation centered at the origin. Which linear equation could represent its image?

1)	3x - 4y = 9	3)	4x - 3y = 9
2)	3x + 4y = 9	4)	4x + 3y = 9

20. The line -3x + 4y = 8 is transformed by a dilation centered at the origin. Which linear equation could represent its image?

1)
$$y = \frac{4}{3}x + 8$$

2) $y = \frac{3}{4}x + 8$
3) $y = -\frac{3}{4}x - 8$
4) $y = -\frac{4}{3}x - 8$

21. Line *l* is represented by the equation y = 4x - 1. Emely says that the equation of line *l* after a dilation with a scale factor of 3 centered at (2,7) is y = 4x - 3. Is Emely correct? Explain your answer.

22. Josue believes that the image of $y = \frac{2}{3}x + 2$ after a dilation of scale factor 2 centered at the origin is 3y = 2x + 6. Is Josue correct? Explain your answer.

23. Line *n* is represented by the equation 3x + 4y = 20. Determine and state the equation of line *p*, the image of line *n*, after a dilation of scale factor $\frac{1}{3}$ centered at the point (4, 2). [The use of the set of axes below is optional.] Explain your answer.

24. Aliyah says that when the line 4x + 3y = 24 is dilated by a scale factor of 2 centered at the point (3, 4), the equation of the dilated line is $y = -\frac{4}{3}x + 16$. Is Aliyah correct? Explain why. [The use of the set of axes below is optional.]