

Skills Practice

Name _____ Date _____

Shifts and Flips Basic Functions and Linear Transformations

Vocabulary

Write the term that best completes each statement.

1. A function undergoes a(n) _____ when it is stretched or shrunk.
2. A(n) _____ is a line in which a function is flipped so that it mirrors itself.
3. A(n) _____ is a transformation in which a function is flipped over a given line.
4. The function $y = x$ is the _____ of the function $y = 2x + 3$.

Problem Set

Indicate the algebraic transformation which was performed on the basic function to result in each transformed function.

1. $y = x + 2$

Add 2.

3. $y = -4x$

2. $y = x - 1$

4. $y = \frac{1}{5}x$

Indicate the graphical transformation(s) which were performed on the basic function to result in each transformed function.

5. $y = x - 3$

Move the graph down 3 units.

6. $y = x + 1$

7. $y = 2x + 3$

8. $y = -3x - 4$

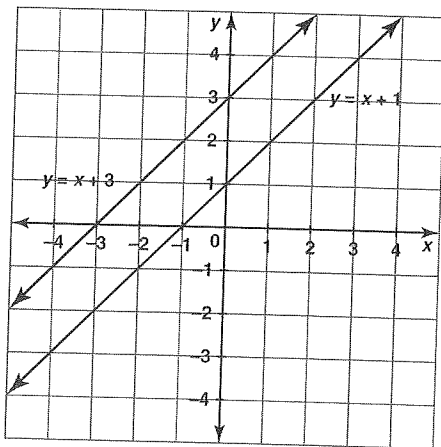
9. $y = -\frac{1}{2}x + 3$

10. $y = \frac{5}{3}x + 4$

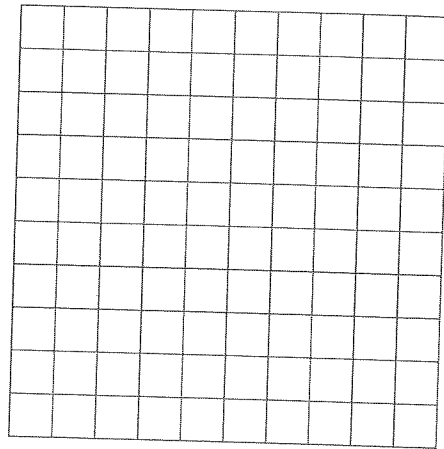
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Graph each set of equations on the same grid. Compare the graphs of the lines. Then determine whether the graphs of the lines are parallel, perpendicular, or neither.

11. $y = x + 3$ and $y = x + 1$



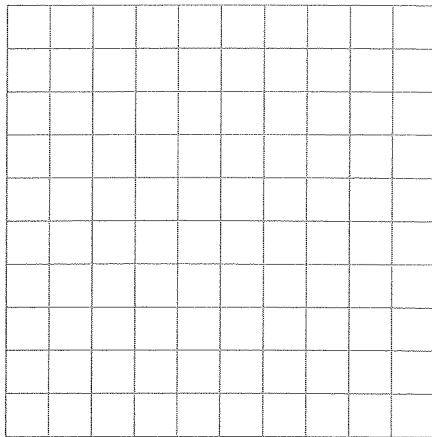
12. $y = 2x$ and $y = 4x$



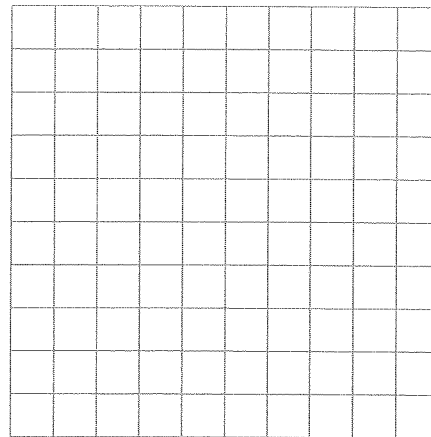
The first graph is shifted two units up from the second graph. The lines are parallel.

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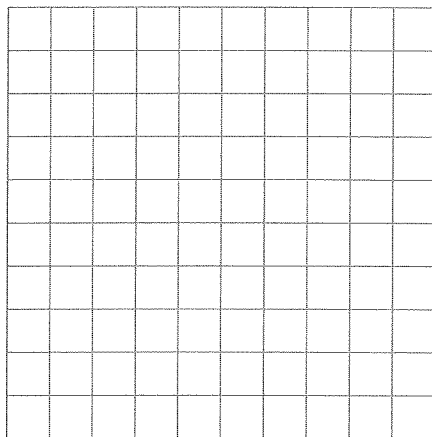
13. $y = -x$ and $y = x + 2$



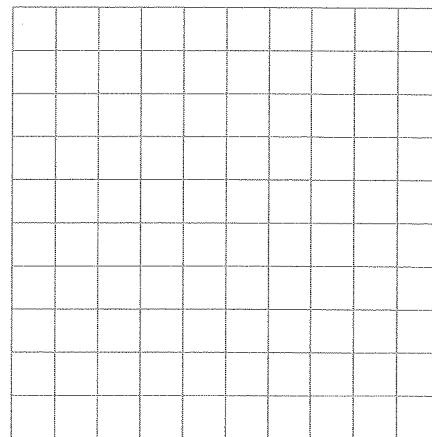
14. $y = \frac{1}{2}x + 2$ and $y = -2x + 3$



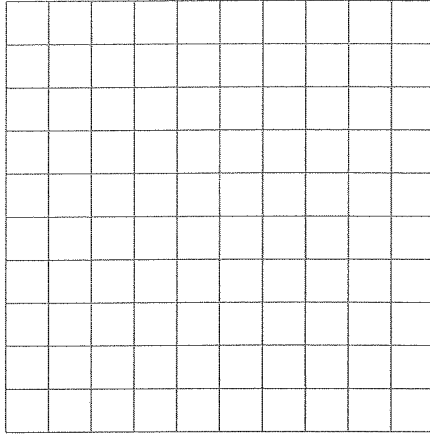
15. $y = \frac{2}{3}x - 2$ and $y = \frac{2}{3}x + 2$



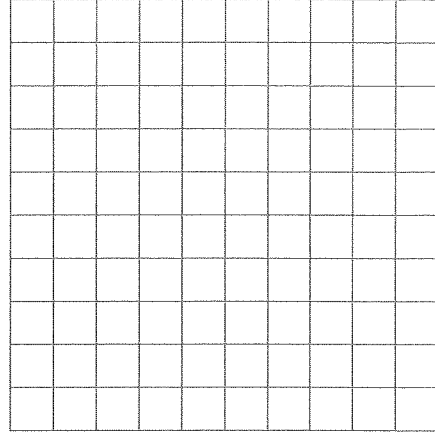
16. $y = \frac{1}{4}x + 3$ and $y = \frac{1}{2}x - 1$



17. $y = -\frac{1}{5}x$ and $y = 5x$

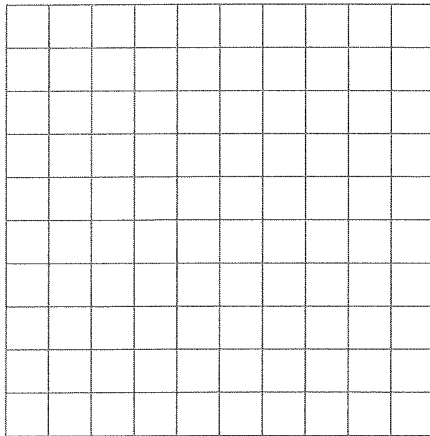


18. $y = -x - 2$ and $y = x - 2$



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19. $y = -2x + 1$ and $y = -2x - 3$.



20. $y = 0$ and $y = 3$

