

Name \_\_\_\_\_ Date \_\_\_\_\_ Pd \_\_\_\_\_

### 8.1 Graphing & Writing Linear Functions DAY TWO CYU

Use when you get it right all by yourself

**S** Use when you did it all by yourself, but made a silly mistake

**H** Use when you could do it alone with a little help from teacher or peer

**G** Use when you completed the problem in a group

**X** Use when a question was attempted but wrong (get help)

**N** Use when a question was not even attempted

| CONCEPTS                                | BASIC      | INTERMEDIATE | ADVANCED |
|-----------------------------------------|------------|--------------|----------|
| Writing equations given two points      |            | 1, 2         | 3, 4     |
| Slope formula                           | 1, 2       | 3, 4         |          |
| Slope-intercept form                    |            | 9 - 14       |          |
| Point-slope form                        | 1 - 4      | 9 - 14       |          |
| Horizontal equations                    | 5 - 8      |              |          |
| Parallel slopes                         | 9, 10, 13  |              |          |
| Perpendicular slopes                    | 11, 12, 14 |              |          |
| Synthetic substitution                  |            | 15, 16       |          |
| Interpreting scenarios with coordinates |            | 15, 16       |          |

Find an equation of the line passing through the given points. Use function notation to write the equation.

1.  $(-2, -4)$  &  $(-4, -3)$

2.  $(-9, -2)$  &  $(-3, 10)$

3.  $(\frac{3}{5}, \frac{2}{5})$  &  $(-\frac{1}{5}, \frac{7}{10})$

4.  $(\frac{1}{2}, -\frac{1}{4})$  &  $(\frac{3}{2}, \frac{3}{4})$

Write an equation of each line using function notation.

5. slope: 0 through  $(-2, -4)$

6. horizontal through  $(-3, 1)$

7. horizontal through  $(0, 5)$

8. slope: 0 through  $(-10, 23)$

Find an equation of each line. Write the equation using function notation.

9. through (3, 8) and // to  $f(x) = 4x - 2$

10. through (1, 5) and // to  $f(x) = 3x - 4$

11. through (2, -5) and  $\perp$  to  $3y = x - 6$

12. through (-4, 8) and  $\perp$  to  $2x - 3y = 1$

13. through (-2, -3) and // to  $3x + 2y = 5$

14. through (-2, -3) and  $\perp$  to  $3x + 2y = 5$

For both functions,  $x$  is the number of years since 1970 and  $y$  (or  $f(x)$  or  $g(x)$ ) is the amount of emissions in millions of tons.

$$f(x) = -0.51x + 31.04 \quad \text{or} \quad g(x) = 0.0004x^2 - 0.53x + 31$$

15. Find  $f(20)$  and describe in words what this means.

16. Find  $g(20)$  and describe in words what this means.

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**CYU Reflection:** How far can you go: basic, intermediate, or advanced?

**Rate your mastery level!**

How confident are you with the skills this CYU covered? Circle the score you would give yourself.

