

Name Key

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)

$$f(x) = -\frac{1}{2}x - 5$$

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

$$g(x) = 2x + 16$$

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

$$h(x) = -\frac{3}{8}x + \frac{5}{8}$$

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

$$j(x) = x - \frac{3}{4}$$

Write an equation of each line using function notation.

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

$$p(x) = -4$$

6. horizontal through (-3, 1)

$$f(x) = 1$$

7. horizontal through (0, 5)

$$q(x) = 5$$

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

$$m(x) = 23$$

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

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

$$f(x) = 4x - 4$$

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

$$h(x) = 3x + 2$$

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

$$m(x) = -3x + 1$$

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

$$n(x) = -\frac{3}{2}x + 2$$

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

$$k(x) = -\frac{3}{2}x - 6$$

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

$$w(x) = \frac{2}{3}x - \frac{5}{3}$$

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.

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

15. Find $f(20)$ and describe in words what this means. $f(20) = 20.84$

In 1990 ≈ 20.84 million tons

16. Find $g(20)$ and describe in words what this means. $g(20) = 20.56$

In 1990 ≈ 20.56 million tons

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.

