Skill 3: Solve and graph compound inequality:

$$2c - 1 < -5 \quad or \quad 3c + 2 \geq 13$$

$\longleftarrow\rule{2cm}{0pt}\longrightarrow$

Solution:_____

Skill 4: Solve and graph an absolute value inequality or equation.

$$\left|6r - 3\right| = 21$$

$\longleftarrow\rule{2cm}{0pt}\longrightarrow$

Solution:_____

Skill 4: Solve and graph an absolute value inequality or equation.

$$\left|6r - 3\right| < 21$$

$\longleftarrow\rule{2cm}{0pt}\longrightarrow$

Solution:_____

Skill 5: Evaluate and graph a function.

Alex, the pizza delivery guy, gets paid $30 plus $3 per pizza that he delivers. The function that represents Alex's earnings is A(p)=3p+30, where **A** represents the amount of money Alex earns and **p** represents the number of pizzas he delivers.

Fill in the chart, draw the graph and use the graph to estimate how many pizzas Alex must deliver to make $80.

p	A(p)

Amount of dollars earned

100

50

10

5   10   15   20

# of pizzas sold
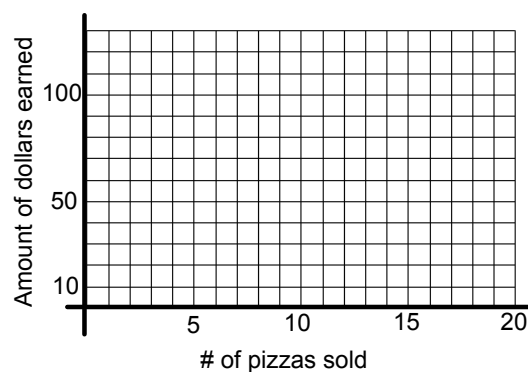
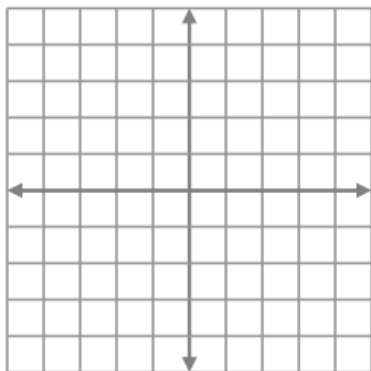## CW   Interesting Slopes Wk 11 Mon CW

There are some lines that have slopes that make it particularly confusing when we try to write their equations. In this activity, we will investigate these "interesting" slopes. Fill in the blanks for the lines that pass through the points given.

1. A line passes through (-3, 2) and (1, 2)
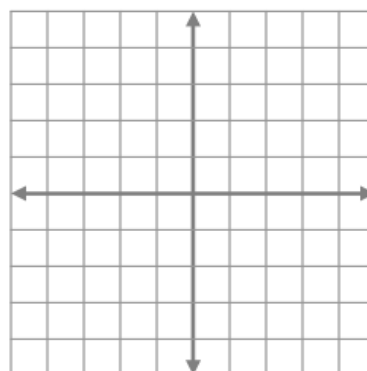   Slope: _____
   y-intercept: _____
   Equation: _____

2. A line passes through (-2, -1) and (5, -1)
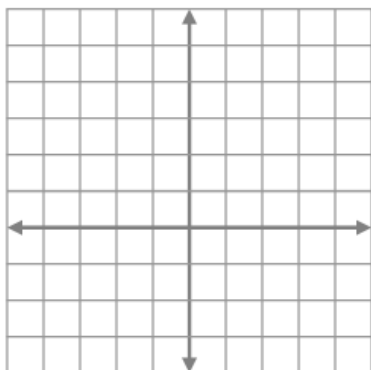   Slope: _____
   y-intercept: _____
   Equation: _____

3. A line passes through (-3, 0) and (4, 0)
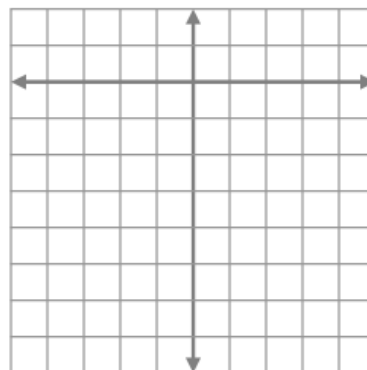   Slope: _____
   y-intercept: _____
   Equation: _____

4. A line passes through (4, -7) and (-5, -7)
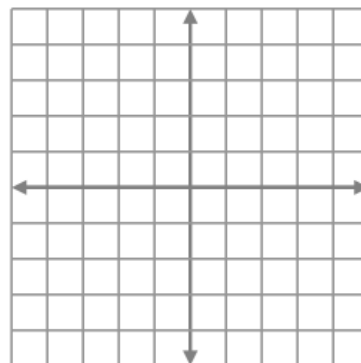   Slope: _____
   y-intercept: _____
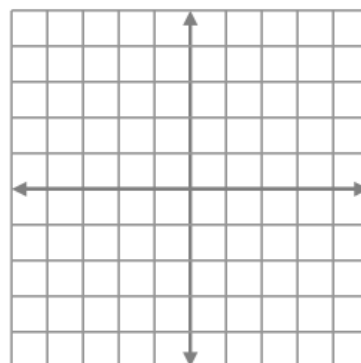   Equation: _____

5. What do all the lines in problems 1-4 have in common?

6. Describe what the <u>graphs</u> of these lines look like.

7. Describe what the <u>equations</u> of these lines look like.

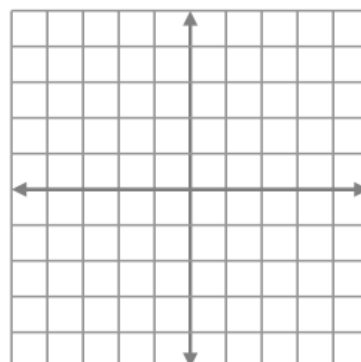8. Explain how to write the equation of any horizontal line.

9.   Suppose a line passes through (2, -3) and (2, 1).

   a.   What is the slope of this line? _____

   b.   What is the *y*-intercept of this line? _____

   c.   Name 3 more points on line: _____

   d.   What do all these points have in common?

   e.   What is the simplest way to write your answer to part d?

10.   Suppose a line passes through (-1, -2) and (-1, 5).

   a.   What is the slope of this line? _____

   b.   What is the *y*-intercept of this line? _____

   c.   Name 3 more points on line: _____

   d.   What do all these points have in common?

   e.   What is the simplest way to write your answer to part d?

11.   Suppose a line passes through (0, -3) and (0, 4)

   a.   What is the slope of this line? _____

   b.   What is the *y*-intercept of this line? _____

   c.   Name 3 more points on line: _____

   d.   What do all these points have in common?

   e.   What is the simplest way to write your answer to part d?

13.   What do all the lines in problems 9-11 have in common?

14.   Describe what the <u>graphs</u> of these lines look like.

15.   Describe what your answers to part e of these questions have in common.

16.   Explain how to write the equation of any vertical line.

Four Types of Slope

Positive slope   A line that rises from left to right
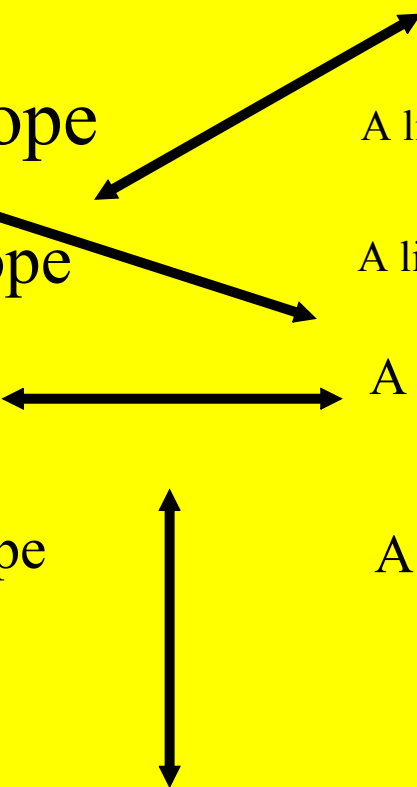
Negative slope   A line that falls from left to right

Zero Slope   A line that is horizontal

Undefined Slope   A line that is vertical

$$\text{Slope} = \frac{\text{vertical rise}}{\text{horizontal run}}$$

The *slope* of a line is the ratio of the vertical change (rise) to the horizontal change (run) between any two points on the line.

5-1 Rate of Change and Slope -

Example 1. Each pair of points lies on a line with the given slope. Find x.

   a. (2, 4) and (x, 8); slope = -2   b. (2, 4) and (x, 8); slope = $-\frac{1}{2}$

HW p 298: 18, 20, 22-29 all, 43-47 odd

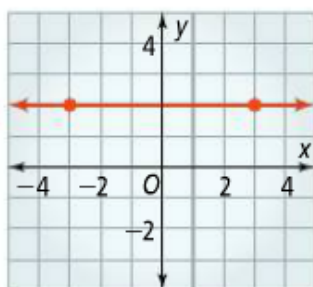**Find the slope of the line that passes through each pair of points.**   ◀ **See Problem 3.**

18. $(1, 3), (5, 5)$

20. $(0, -1), (2, 3)$

22. $(2, -3), (5, -4)$

Find the slope of each line.   ◀ **See Problem 4.**

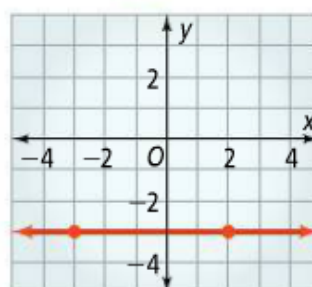**23.**

24.

25.
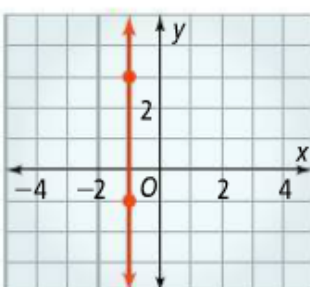
Without graphing, tell whether the slope of a line that models each linear relationship is *positive, negative, zero,* or *undefined*. Then find the slope.

26. The length of a bus route is 4 mi long on the sixth day and 4 mi long on the seventeenth day.

27. A babysitter earns $9 for 1 h and $36 for 4 h.

28. A student earns a 98 on a test for answering one question incorrectly and earns a 90 for answering five questions incorrectly.

29. The total cost, including shipping, for ordering five uniforms is $66. The total cost, including shipping, for ordering nine uniforms is $114.

Each pair of points lies on a line with the given slope. Find *x* or *y*.

43. $(4, 3), (5, y)$; slope $= 3$

45. $(3, y), (1, 9)$; slope $= -\dfrac{5}{2}$

47. $(3, 5), (x, 2)$; undefined slope