Semester 2 Final Study Guide

Name:

Unit 3 Part II

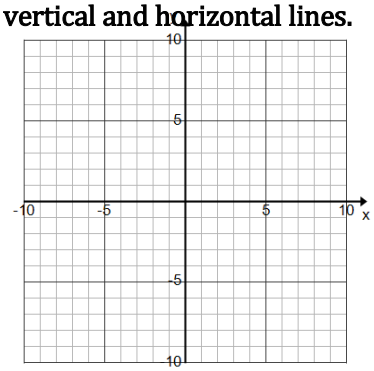
✓ **Objective: Find the slope of the line given two points.** ☺ 😐 ☹

1. Find the slope of the line given the points (3, -5) and (-2, -3).

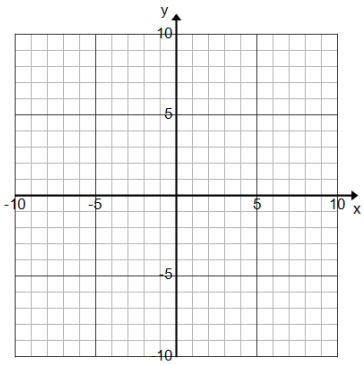
2. Find the slope of the line given the points (4, 0) and (4, 10).

✓ **Objective: Graph vertical and horizontal lines.** ☺ 😐 ☹

3. $x = -2$



4. $2y = 14$

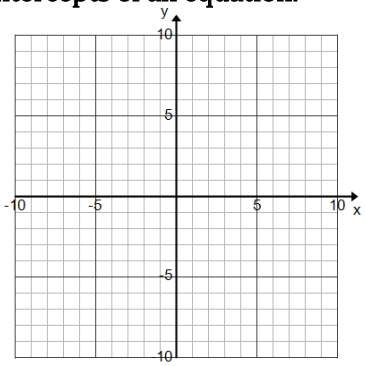


✓ **Objective: Find the x and y intercepts of an equation.** ☺ 😐 ☹

5. $3x - 9y = 18$

x-intercept: _____

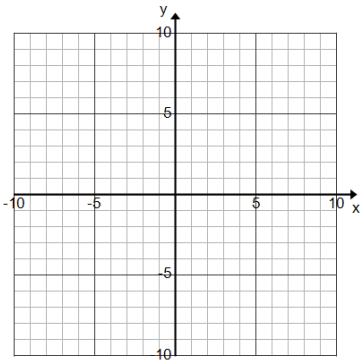
y – intercept: _____



6. $-2x + 3y = 6$

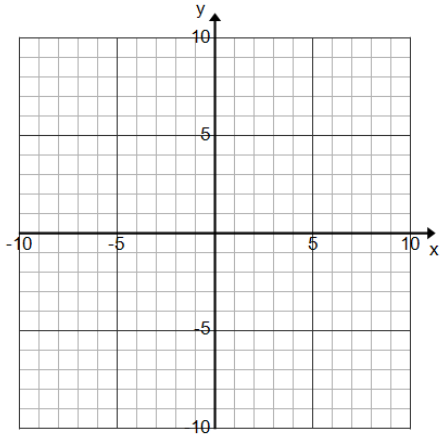
x-intercept: _____

y – intercept: _____

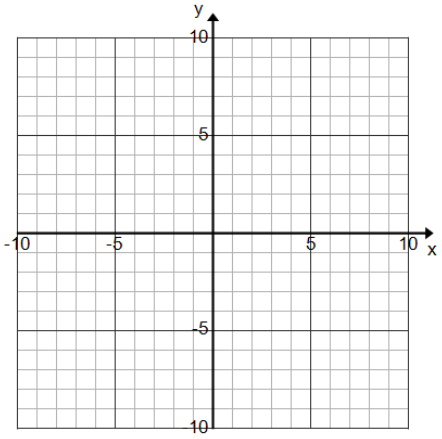


✓ **Objective: Graph lines with restricted domain and range.** ☺ 😐 ☹

7. Graph $x = 3$ with restricted range $y > -1$

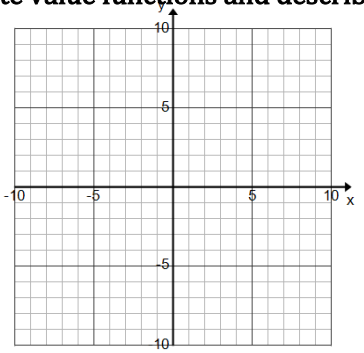


8. Graph $y = -4$ with restricted domain $x \leq 3$

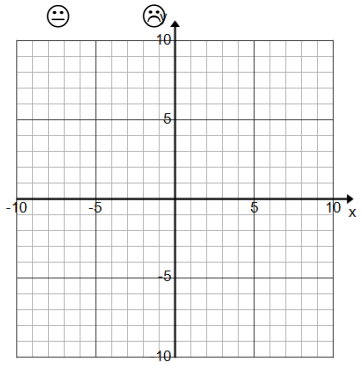


✓ **Objective: Graph absolute value functions and describe the transformations.** ☺ 😐 ☹

9. Graph y = |x + 5|



10. Graph y = |x| - 2



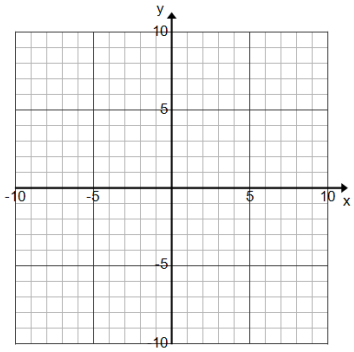
11. **Describe the transformation:**
y = -|x – 7| + 10

12. **Write the equation to represent the graph.**
The absolute value graph is reflected over the y-axis and shifted down 3 units.

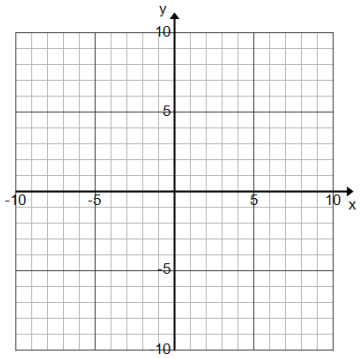
UNIT 4

✓ **Objective: Write and graph an equation in Slope-Intercept Form $y = mx + b$** . ☺ 😐 ☹

13. Given the slope is $-\frac{1}{3}$ and goes through (0, 2)

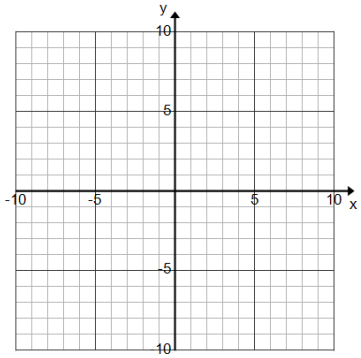


14. Given the slope is 2 and goes through (-1, 4)

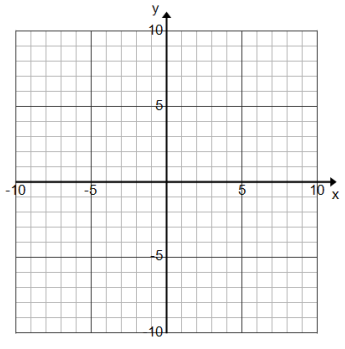


✓ **Objective: Write and graph an equation in Point-Slope Form : $y - y_1 = m(x - x_1)$.** ☺ 😐 ☹

15. Slope = $\frac{-3}{4}$ and goes through (4, 5)



16. Goes through points (-2, 4) and (-3, 7)



✓ **Objective: Write an equation in Standard Form: $Ax + By = C$** ☺ 😐 ☹

17. Rewrite the equation in Standard Form:
$y = -4x + 10$

18. Write the equation in standard form given slope is 8 and goes through (1, 1)

✓ **Objective: Writing Equations of Parallel and Perpendicular Lines** ☺ 😐 ☹

19. Write an equation (in Slope-Intercept Form) of the line that passes through (-3, -5) and is parallel to the line $y = 3x - 1$.

20. Write an equation (in Standard Form) of the line that passes through (-4, 2) and is perpendicular to $y = \frac{1}{4}x - 7$.

✓ **Objective: Solve Linear Application Problems.** ☺ 😐 ☹

21. Luke decides to work on his push-ups. Right now, he can do 35 push-ups. Every day, he can do two more push-ups.

a) Define your variables.

b) Write an equation in slope-intercept form.

c) How many push-ups can he do in 20 days?

d) On what day can he do 155 push-ups?

✓ **Objective: Use scatterplots to answer questions about a data set.** ☺ 😐 ☹

22. How many free throws were made after 5 days of practice?

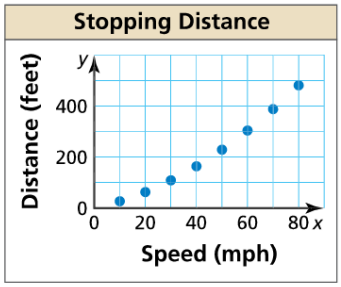
23. How many days of practice was it if the athlete makes 2 free throws?

24. What tends to happen to the free throws made as the number of days practiced increases?

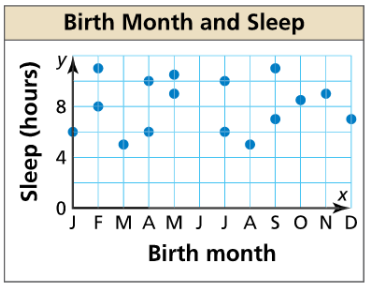
✓ **Objective: Determine if a set of data represents a positive, negative, or no correlation.** ☺ 😐 ☹

25. Tell whether the data show a *positive*, a *negative*, or *no* correlation.

a. stopping distance of an automobile



26. **b.** birth month and hours of sleep



✓ **Objective: State the Independent and Dependent Variables.** ☺ 😐 ☹

27. The number of minutes spent driving and the miles you have left to your destination.

- Correlation = _____
- Independent = _____
- Dependent = _____

28. The size of your shoe and your favorite TV show.

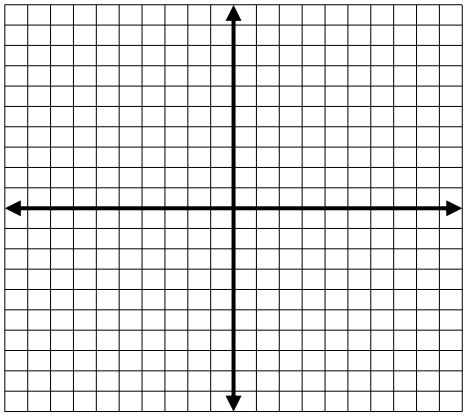
- Correlation = _____
- Independent = _____
- Dependent = _____

✓ **Objective: Solve a system by graphing.** ☺ 😐 ☹

Solve the system by graphing.

$x + y = 4$

$2x + y = 5$



✓ **Objective: Solve a system by substitution.** ☺ 😐 ☹

$2x - y = 10$

$y = 5 - 3x$

Objective: Solve a system by elimination. ☺ 😐 ☹

$2x - 3y = 4$

$-4x + 5y = -8$

✓ **Objective: Solve special cases of systems.** ☺ 😐 ☹

$y = -1 - x$

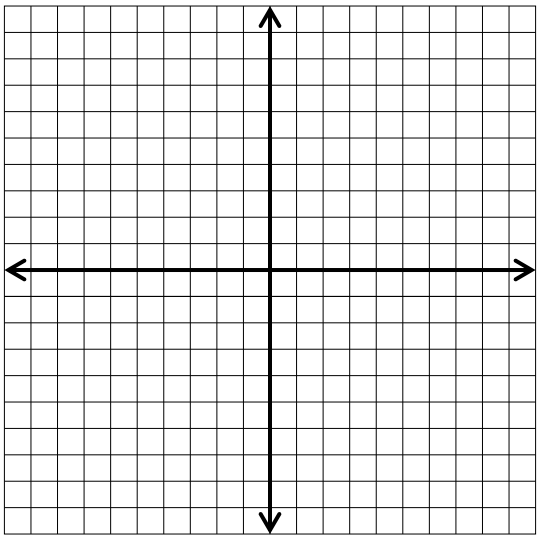
$x + y = 8$

✓ **Objective: Solve word problems involving systems of equations.** ☺ 😐 ☹

Charlie's Cupcakes sells cheesecake and Oreo flavored cupcakes. On Monday, Charlie's sold 100 cheesecake and Oreo cupcakes. Cheesecake cupcakes sell for $6 and Oreo cupcakes sell for $5 each. If the bakery made $580 just on cheesecake and Oreo, which flavor sold the most?

✓ **Objective: Solve a system of linear inequalities.** ☺ 😐 ☹

Graph the inequality $\begin{matrix} y+3 \le \frac{1}{2}x \\ x+y>5 \end{matrix}$



✓ **Objective: Linear Programming.** ☺ 😐 ☹

$$\begin{cases} x \ge 0 \\ y \ge 0 \\ y \le -2x+8 \\ y \le -x+5 \end{cases}$$