

Today's Plan:

Learning Target (standard): I will describe quadratic equations as functions. I will perform operations on functions.

Students will: Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, take notes over new material and complete practice problems over new concepts.

Teacher will: Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide examples of new concepts and assign students assessment problems over new concepts.

Assessment: Board work, homework check and homework assignment

Differentiation: Students will work at the board, go over and correct homework at their seats, actively engage in lecture over new concepts, practice new concepts with the aid of other students and the teacher and complete homework assignment.

NAME _____ #124

BELL RINGER

1.) Find the volume of a box that has a length of 11 inches, a width of 5 inches, and a height of 20 inches. $V = lwh$
 $V = 11(5)(20)$
 $V = 1100 \text{ in}^3$

2.) Solve $5x - 3 = 4x + 2$
 $x - 3 = 2$
 $x = 5$

3.) $-2f(2) + 3g(1) =$
 $f(x) = -3x + 4$
 $g(x) = 3x^2 + 2x - 1$
 $f(2) = -3(2) + 4$
 $= -6 + 4$
 $f(2) = -2$
 $-2f(2) = -2(-2)$
 $-2f(2) = 4$
 $g(1) = 3(1)^2 + 2(1) - 1$
 $= 3 + 2 - 1$
 $g(1) = 4$
 $3g(1) = 3(4)$
 $3g(1) = 12$
 $-2f(2) + 3g(1) = 4 + 12$
 $-2f(2) + 3g(1) = 16$

$$6) g(n) = n^2 + 3n$$

$$f(n) = 2n + 3$$

$$5g(-5) + 5f(-5) =$$

$$f(-5) = 2(-5) + 3$$

$$= -10 + 3$$

$$f(-5) = -7$$

$$5f(-5) = 5(-7)$$

$$5f(-5) = -35$$

$$g(-5) = (-5)^2 + 3(-5)$$

$$= 25 - 15$$

$$g(-5) = 10$$

$$5g(-5) = 5(10)$$

$$5g(-5) = 50$$

$$5g(-5) + 5f(-5) = 50 + (-35)$$

$$5g(-5) + 5f(-5) = 15$$

Graph.

$$f(x) = -x^2 - 4x$$

1) opens down \rightarrow maximum

2) vertex: $(-2, 4)$

$$x = -\frac{b}{2a} = \frac{4}{2(-1)} = \frac{4}{-2} = -2$$

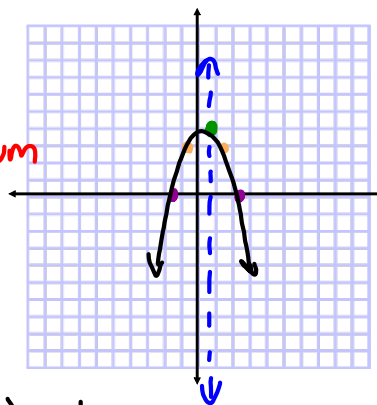
$$f(-2) = -(-2)^2 - 4(-2)$$

$$= -4 + 8$$

$$f(-2) = 4$$

3) AOS: $x = -2$

| x | y |
|------|---|
| * -4 | 0 |
| * -3 | 3 |
| -2 | 4 |
| * -1 | 3 |
| * 0 | 0 |



$$f(0) = -(0)^2 - 4(0)$$

$$= 0 - 0$$

$$f(0) = 0$$

$$f(-1) = -(-1)^2 - 4(-1)$$

$$= -1 + 4$$

$$f(-1) = 3$$

Evaluate.

$$f(x) = -2x^2 + 3x - 1 \quad g(x) = 4x^2 - 6x + 2$$

$$f(-2) \cdot g(1)$$

$$f(-2) = -2(-2)^2 + 3(-2) - 1$$

$$= -8 - 6 - 1$$

$$f(-2) = -15$$

$$g(1) = 4(1)^2 - 6(1) + 2$$

$$= 4 - 6 + 2$$

$$g(1) = 0$$

$$f(-2) \cdot g(1) = -15 \cdot 0$$

$$f(-2) \cdot g(1) = 0$$

Evaluate.

$$f(x) = 3x - 2 \quad g(x) = -x^2 + 2x - 4$$

$$\frac{f(2)}{g(-3)}$$

$$f(2) = 3(2) - 2$$

$$= 6 - 2$$

$$f(2) = 4$$

$$g(-3) = -(-3)^2 + 2(-3) - 4$$

$$= -9 - 6 - 4$$

$$g(-3) = -19$$

$$\frac{f(2)}{g(-3)} = \frac{4}{-19}$$

Evaluate.

$$f(x) = 3x - 2 \quad g(x) = -x^2 + 2x - 4$$

$$-2f(1) - 3g(2)$$

$$f(1) = 3(1) - 2$$

$$= 3 - 2$$

$$f(1) = 1$$

$$-2f(1) = -2(1)$$

$$-2f(1) = -2$$

$$g(2) = -(2)^2 + 2(2) - 4$$

$$= -4 + 4 - 4$$

$$g(2) = -4$$

$$-3g(2) = -3(-4)$$

$$-3g(2) = 12$$

$$-2f(1) - 3g(2) = -2 + 12$$

$$-2f(1) - 3g(2) = 10$$

Evaluate.

$$f(x) = 3x - 2 \quad g(x) = -x^2 + 2x - 4$$

$$2g(-2) - 3f(1) \quad f(1) = 3(1) - 2$$

$$= 3 - 2$$

$$g(-2) = -(-2)^2 + 2(-2) - 4$$

$$= -4 - 4 - 4$$

$$f(1) = 1$$

$$g(-2) = -12$$

$$-3f(1) = -3(1)$$

$$-3f(1) = -3$$

$$2g(-2) = 2(-12)$$

$$2g(-2) = -24$$

$$2g(-2) - 3f(1) = -24 - 3$$

$$2g(-2) - 3f(1) = -27$$

Assignment:

Operations on Functions 2

#1-6

* Show ALL steps and label using appropriate function notation. *