

Bridge to Algebra 2, Algebra 2, and Honors Algebra 2 Summer Review Packet 2010

1. (a) $m = \frac{2}{3}$

(b) $y = \frac{2}{3}x + \frac{13}{3}$

2. $y = 3x - 27$

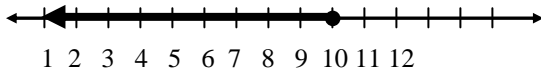
3. $y = -\frac{1}{4}x$

4. (a) $x = -5$

(b) $x = \frac{2}{5}$

(c) $x = 27$

5. $t \leq 10$



6. a) $\begin{bmatrix} 7 & 13 \\ 13 & -3 \end{bmatrix}$

b) $\begin{bmatrix} -22 & 5 \\ 29 & 3 \end{bmatrix}$

c) $\begin{bmatrix} -48 & -28 \\ 4 & 12 \end{bmatrix}$

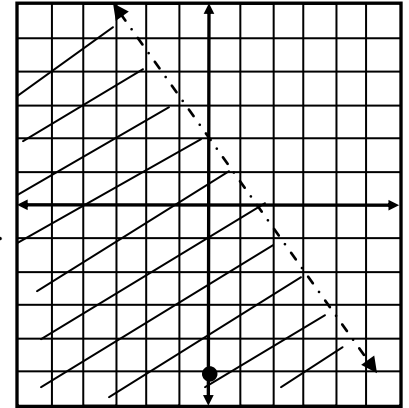
7. $y < -\frac{4}{3}x + 2$

(0, -5) is a solution.

It is in the shaded region.

or

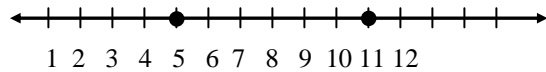
$6 + 3(-5) < 4(3 - 0)$



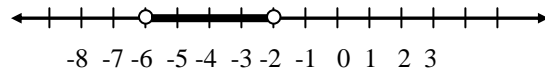
$-12 < 12$ is true. Therefore (0, -5) is a solution.

8. (3, 1)

9. (a) $x = 11$ or $x = 5$



(b) $-6 < x < -2$



10. (a) $-3x^3 + 4x^2 + x + 2$

(b) $4x^2 + 17xy - 15y^2$

(c) $6x^3 + 25x^2 - 29x - 20$

(d) $\frac{8x - 6x^2y^2}{y}$

11. $25x^2 - 20x + 4$

12. (a) $3xy(3xy^2 - x^2y - 5)$

(b) $(3x + 8)(3x - 8)$

(c) $(2x + 1)(x - 3)$

13. (a) $x = -7$ or $x = 6$

(b) $x = 7$ or $x = -3$

(c) $x = \frac{3}{2}$ or $x = \frac{2}{3}$

14. (a) x^6

(b) m^{15}

(c) y^6

(d) $\frac{1}{a^3}$

(e) $\frac{y^5}{4x}$

(f) $\frac{4}{9}$

(g) $4\sqrt{5}$

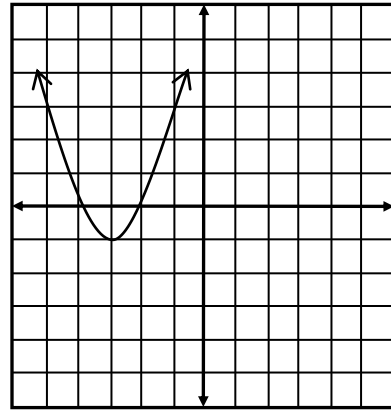
(h) $-3\sqrt{3}$

(i) $\frac{3\sqrt{2}}{7}$

15. $y = -8$

16. \$1400

17. (a)



Domain: all real numbers

Range: $y \geq -1$

Axis of Symmetry: $x = -3$

Increases: $x > -3$

Decreases: $x < -3$

x-intercept(s): -4 & 2

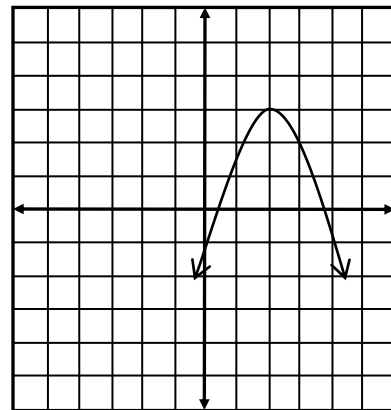
y-intercept: 8

Minimum Value: -1

Maximum Value: none

Continuous: yes (all real numbers)

(b)



Domain: all real numbers

Range: $y \leq 3$

Axis of symmetry: $x = 2$

Increases: $x < 2$

Decreases: $x > 2$

x-intercept(s): 0.3 & 3.7

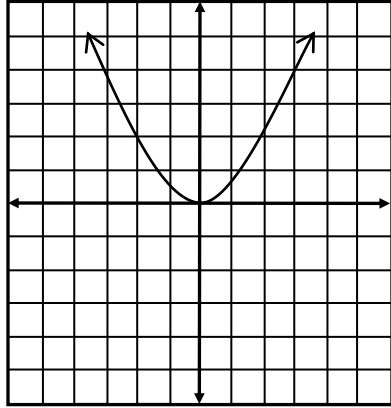
y-intercept: -1

Minimum Value: none

Maximum Value: 3

Continuous: yes (all real numbers)

17. (c)



Domain: all real numbers
 Range: $y \geq 0$
 Axis of Symmetry: $x = 0$
 Increases: $x > 0$
 Decreases: $x < 0$
 x-intercept(s): 0
 y-intercept: 0
 Minimum Value: 0
 Maximum Value: none
 Continuous: yes (all real numbers)

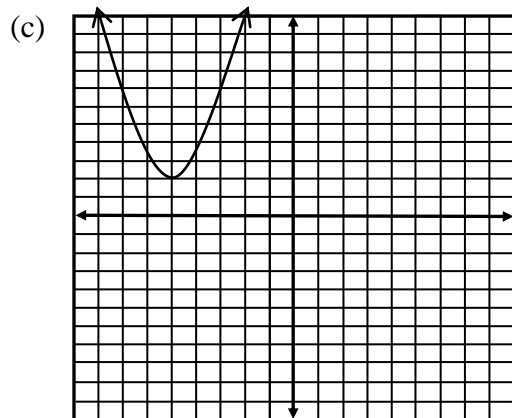
18. (a) $y = x^2 + 6x + 8$

(b) $y = -x^2 + 4x - 1$

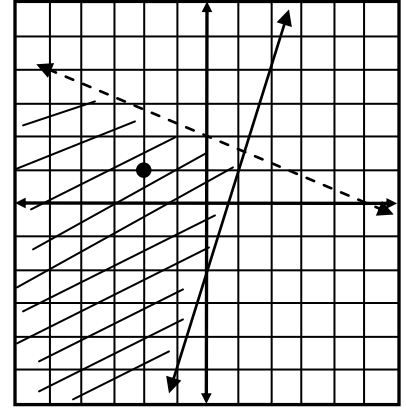
(c) $y = \frac{1}{2}x^2$

19. (a) $y = (x + 5)^2 + 2$

(b) vertex: $(-5, 2)$
 axis of symmetry: $x = -5$



20. $y < -\frac{2}{5}x + 2$
 $y \geq 3x - 2$



$(-2, 1)$ is a solution to the system of linear inequalities since it is in the shaded region.

or

$$2(-2) + 5(1) < 10$$

$$1 \geq 3(-2) - 2$$

$$1 < 10 \text{ is true}$$

$$1 \geq -8 \text{ is true}$$

Therefore, $(-2, 1)$ is a solution to the system of linear inequalities.

21. $x = 3, y = 3\sqrt{3}$