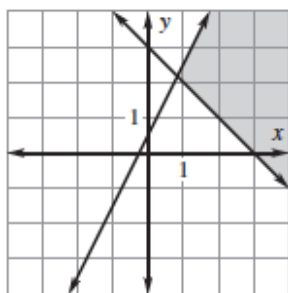


First Quarter Midterm Review (Chapters 1-4.4)
Advanced Algebra with Trig, Glawe

Name: _____

Date: _____ P: _____

1) Which system of inequalities is represented by the graph below?



A) $x + y < 3$
 $-4x + 2y > 1$

B) $x + y \geq 3$
 $-4x + 2y \leq 1$

C) $x + y \geq 3$
 $-4x + 2y > 1$

D) $x + y \leq 3$
 $-4x + 2y \geq 1$

2) Find the slope of the line passing through the points $(-3, 6)$ and $(-7, 3)$.

A) $4/3$

B) $-6/13$

C) $-13/6$

D) $3/4$

3) What is the solution of the linear system?

$3x + y = -1$
 $4x + 2y = 2$

A) $(-1, 1)$

B) $(1, -1)$

C) $(-2, 5)$

D) $(2, -5)$

E) $(5, -2)$

4) You drive 45 miles per hour. What is your speed in feet per second?

A) 3960 feet per second

B) 66 feet per second

C) 30.68 feet per second

D) 1.95 feet per second

5) How is the inequality $x < -2$ or $x > 5$ written in interval notation?

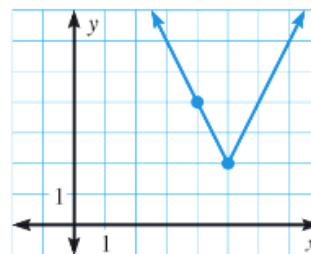
A) $(-\infty, 5) \cup (-2, \infty)$

B) $(-2, 5)$

C) $(-\infty, -2) \cup (5, \infty)$

D) $(-\infty, -2] \cup [5, \infty)$

6) Which equation represents the graph below?



A) $y = |x - 5| + 2$

B) $y = |x + 5| + 2$

C) $y = 2|x - 5| + 2$

D) $y = 2|x + 5| + 2$

7) Solve the equation $y = 12x^2 - 17x - 5$.

A) $x = -1/4, 5/3$

B) $x = 1/4, 5/3$

C) $x = -1/4, -5/3$

D) $x = 1/4, -5/3$

8) What is the solution of the linear system?

$6x - 2y = 5$

$-3x + y = 7$

A) $(1, 1)$

B) $(0, 0)$

C) Infinitely many

D) No solution

9) In one week, a music store sold 9 guitars for a total of \$3611. Electric guitars sold for \$479 each and acoustic guitars sold for \$339 each. How many of each type of guitar sold?

A) 5 acoustic, 4 electric

B) 4 acoustic, 5 electric

C) 3 acoustic, 6 electric

D) 6 acoustic, 3 electric

10) Solve the equation $|2x + 5| = 3x$.

A) $x = 5, 1$

B) $x = 5, -1$

C) $x = -5$

D) $x = 5$

11) Factor the expression $2c^2 - 2c - 12$ completely.

A) $(c - 2)(c + 3)$

B) $2(c - 2)(c + 3)$

C) $2(c + 2)(c - 3)$

D) $(c + 2)(c - 3)$

E) $(c + 2)(2c - 6)$

12) Solve the inequality $|3a + 4| > 2$.

- A) $a > 2/3$ or $a < -2$
- B) $a > -2/3$ or $a < -2$
- C) $-2 < a < -2/3$
- D) $-2 < a < 2/3$

13) What is the maximum value of the function $g(x) = -3x^2 + 18x - 5$?

- A) 22
- B) -32
- C) -86
- D) 76

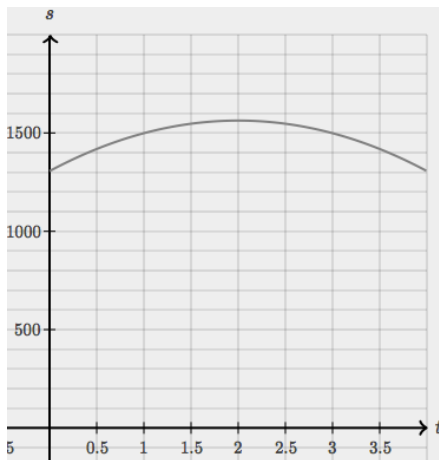
14) What is the vertex of the equation $y = 2(x - 3)(x + 5)$?

- A) (-1, -16)
- B) (-1, -32)
- C) (1, -24)
- D) (1, -12)

15) Write the equation $y = 2/3x + 4$ into standard form.

- A) $-2/3x + y = 4$
- B) $2/3x - y = -4$
- C) $2x + 3y = 12$
- D) $2x - 3y = -12$
- E) $-2x + 3y = 12$

16) The number of secure Internet servers in the United States from 2009 to 2013 can be modeled by a quadratic function. The graph approximates the number of secure Internet servers, s , per 1



million people, for the given year, where t represents the years since 2009. Which of the following functions best models the number of secure Internet servers in the United States per 1 million people between 2009 and 2013?

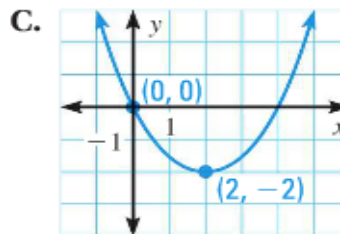
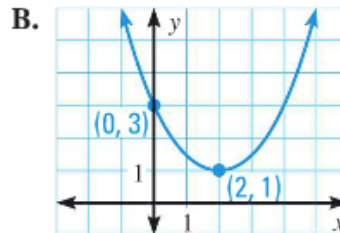
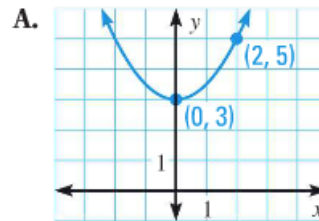
- A) $s = -7(t + 2)^2 - 1560$
- B) $s = -7(t + 2)^2 + 1560$
- C) $s = -64(t + 2)^2 - 1560$
- D) $s = -64(t - 2)^2 + 1560$

For 17-19, match the graphs below to each equation.

17) $y = 0.5x^2 - 2x$ Graph _____

18) $y = 0.5x^2 + 3$ Graph _____

19) $y = 0.5x^2 - 2x + 3$ Graph _____



20) Solve the equation $5p^2 = -4 - 12p$.

- A) prime
- B) $p = -5/2, -2$
- C) $p = -2/5, -2$
- D) $p = 2/5, 2$

21) What is the solution of the linear system?

$$\begin{aligned} 2x + 3y &= -2 \\ 4x + 7y &= -6 \end{aligned}$$

- A) (-1, 1)
- B) (2, 2)
- C) (-2, 5)
- D) (2, -2)

22) Find the equation of a line that has a slope of 2 and goes through the point (-1, 2).

- A) $y = 2x + 2$
- B) $y = 2x - 1$
- C) $y = 2x + 4$
- D) $y = -1/2x + 2$