

Name: Key

Date: _____

Algebra I Midterm Review 7

1. Gretchen has \$50 that she can spend at the fair. Ride tickets cost \$1.25 each and game tickets cost \$2 each. She wants to go on a minimum of 10 rides and play at least 12 games. Which system of inequalities represents this situation when r is the number of ride tickets purchased and g is the number of game tickets purchased?

a. $1.25r + 2g < 50$

$r \leq 10$

$g > 12$

b. $1.25r + 2g \leq 50$

$r \geq 10$

$g \geq 12$

c. $1.25r + 2g \leq 50$

$r \geq 10$

$g > 12$

d. $1.25r + 2g < 50$

$r \leq 10$

$g \geq 12$

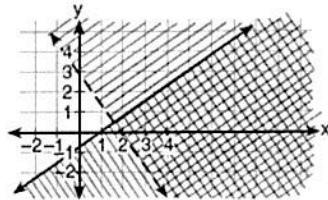
$$1.25r + 2g \leq 50$$

$$r \geq 10$$

$$g \geq 12$$

B

2. Which coordinate point is in the solution set for the system of inequalities shown in the accompanying graph?



(1) (3,1)

(2) (1,-1)

(3) (2,2)

(4) (0,1)

3. What is one solution of the following system of equations?

(10, -3)

$$\begin{array}{r} x + y = 7 \\ + x - y = 3 \\ \hline 2x = 10 \\ x = 10 \end{array}$$

$$\begin{array}{r} x + y = 7 \\ 10 + y = 7 \\ -10 + y = -7 \\ \hline y = -3 \end{array}$$

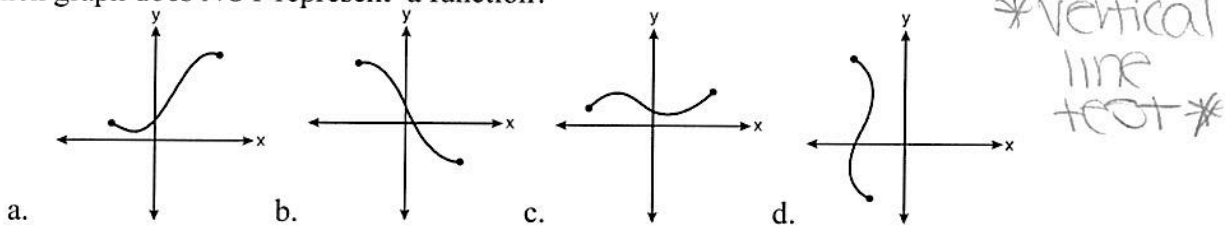
(1) (3,4)

(2) (5,2)

(3) (10,-3)

(4) (8,-1)

4. Which graph does NOT represent a function?



5. Which number is irrational?

B

- a. $\sqrt{9}$
- b. $\sqrt{8}$
- c. 0.33333
- d. $\frac{2}{3}$

non-terminating / non-repeating decimal

6. Which expression is the same as $8x^6y^3$?

2

- (1) $8(xy)^3$
- (2) $(2x^2y)^3$
- (3) $(4x^3y)^2$
- (4) $(8x^2y)^3$

7. Given the equation: $3x - y = 6$

a. What is the slope of the line?

3

$$\begin{aligned}
 3x - y &= 6 \\
 -\cancel{3x} - y &= \cancel{-3x} - 6 \\
 \hline
 -y &= -3x + 6 \\
 \hline
 y &= 3x - 6
 \end{aligned}$$

b. What is the y-intercept of the line?

(0, -6)

8. What is the value of the expression $|-5x + 12|$ when $x = 5$?

$$\begin{aligned}
 &|-5(5) + 12| \\
 &|-25 + 12| \\
 &|-13| = 13
 \end{aligned}$$

absolute value in calc:
 [MATH] → [] TO "NUM"
 [ENTER] → ABS

9. Simplify the following radicals:

a. $\sqrt{45}$

$$\begin{array}{c} \sqrt{45} \\ \swarrow \quad \searrow \\ \sqrt{9} \quad \sqrt{5} \\ \boxed{3\sqrt{5}} \end{array}$$

$$\begin{array}{r} 45 \\ 1 \overline{) 45} \\ \underline{45} \\ 0 \end{array}$$

3 15
5 9 PERF □

$$\begin{aligned} 1^2 &= 1 \\ 2^2 &= 4 \\ 3^2 &= 9 \\ 4^2 &= 16 \\ 5^2 &= 25 \\ 6^2 &= 36 \\ 7^2 &= 49 \end{aligned}$$

b. $\sqrt{27}$

$$\begin{array}{c} \sqrt{27} \\ \swarrow \quad \searrow \\ \sqrt{9} \quad \sqrt{3} \\ \boxed{3\sqrt{3}} \end{array}$$

$$\begin{array}{r} 27 \\ 1 \overline{) 27} \\ \underline{27} \\ 0 \end{array}$$

3 9 PERF □

10. Given $A = 3x - 1$ and $B = 4x$, what is $2A - B$?

$$\begin{array}{r} 2(3x - 1) - 4x \\ \underline{6x - 2 - 4x} \\ \boxed{2x - 2} \end{array}$$

11. What is the value of $f(x) = 2x - 10$ when $f(x) = 5$?

$$\begin{array}{r} 5 = 2x - 10 \\ +10 \quad \quad +10 \\ \hline 15 = 2x \\ \frac{15}{2} = \frac{2x}{2} \end{array}$$

$$x = \frac{15}{2} \text{ OR } 7.5$$

12. Simplify the following with positive exponents only:

$$\frac{10x^3y^4z}{2x^6y^2z^3}$$

$$5x^{-3}y^2z^{-2} = \boxed{\frac{5y^2}{x^3z^2}}$$