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Algebra 2 Final REVIEW—Fall 2009

1. Which of the following sets of numbers does **not** contain ?

A. real B. rational C. irrational D. all of these.

2. What is the value of ?

A. 1/45 B. 1/225 C. 1/3375 D. 1/50625

3. What is the value of ?

A. 2 B. 3 C. 4 D. 8

4. What is the slope-intercept form of a linear equation with m = 2 and b = -5?

A. y = 2x + 5 B. y = ½ x – 5 C. y = 2x – 5 D. y = - 5 x + 2

5. Which property of addition is illustrated by the statement A + B = B + A

A. Associative property B. Commutative Property

C. Identity Property D. Inverse Property

6. Which property of multiplication is illustrated by the statement

A. Associative property B. Commutative Property

C. Identity Property D. Inverse Property

7. Evaluate the expression.

A. 3 B. 4 C. 5 D. 6

8. Write the equation that is parallel to the line y = ½ x and goes through the point (8,3).

A. y = ½ x – 1 B. y = - ½ x + 3 C. y = ½ x + 3 D. y = ½ x + 1

9. Solve the inequality for x: 

A.  B.  C.  D. 

10. Which of the following relations is **not** a function?

A. {(2, 1), (3, 1), (4, 5)} B. {(2, 1), (2, 3), (5, 4)}

C. {(3, 1), (4, 5), (-2, 5)} D. {(-1, 1), (-2, 2), (-3, 3)}

11. If  and , which operation gives the new function ?

A.  B.  C.  D. 

12. What is the inverse of the function?

A.  B. 

C.  D. 

13. Identify the transformations from  to the function .

1. Vertical compression by a factor of , vertical translation 2 units down.
2. Horizontal compression by a factor of, vertical translation 2 units down.
3. Horizontal stretch by a factor of 3, vertical translation 2 units down.
4. Horizontal stretch by a factor of 3, vertical translation 2 units down.

14. What is the inverse function of g(x) = x ?

A. y = ½ x + 5 B. y = ½ x – 5 C. y = 5x D. y = - ½ x + 5

15. What is an example of the special functions studied this semester?

A. scatter plots B. linear C. piecewise D. quadratic

16. Two different lines in a system of equations has \_\_\_\_\_\_\_\_\_solution(s).

A. none B. one C. two D. infinite

17. Solve: 

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

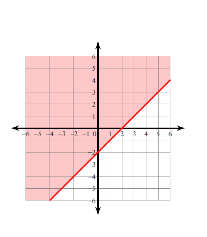
18. Solve: 

A. (4, 8) B. (-4, 8) C. no solution D. infinite solutions

19. How would the linear inequality  be graphed?

A. solid line, shade below B. dashed line, shade below

C. solid line, shade above D. dashed line, shade above



20. Write the inequality to represent the following graph:

A.

B.

C.

D.

21. Which vertex would give the maximum to the objective function I = 5x - 2y ?

A. (0, 1) B. (2, 3) C. (2, 0) D. (3, 2)

22. The area of a parking lot is 600 square meters. A car requires 6 square meters of space. A bus requires 30 square meters of space. The attendant can handle only 60 vehicles total. If a car is charged $2.50 and a bus is charged $7.50 to park.

Write a system of inequalities to represent the constraints. Let *x* represent cars and *y* represent busses.

1. B. C. D.

23. The area of a parking lot is 600 square meters. A car requires 6 square meters of space. A bus requires 30 square meters of space. The attendant can handle only 60 vehicles total. If a car is charged $2.50 and a bus is charged $7.50 to park.

Write the objective function that maximizes the income. Let x represent cars and *y* represent busses.

1. I = 6x + 30y B. I = 300x + 300y C. I = 7.50x + 2.50y D. I = 2.50x + 7.50y

24. Which of the following is **not** a quadratic?

A. y = 2x + 3 B. y = x2– 1 C. y = (x + 1)(x + 2) D. y =

25. Multiply and simplify: (3x - 1)(2x + 2)

A. 6x2 + 7x – 2 B. 6x2 + 5x – 2 C. 6x2 – 5x – 2 D. 4x2 – 5x + 2

26. Solve: (x+1)2=81

A. 10, 8 B. 8, -10 C. -10, -8 D. -8, 10

27. Factor using the greatest common factor: 3x2 + 27x

A. 3(x2 + 9x) B. 3x(x + 9) C. 1(3x2 + 27x) D. x(3x + 27)

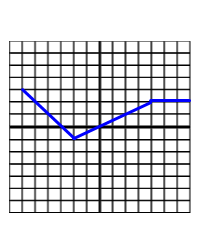
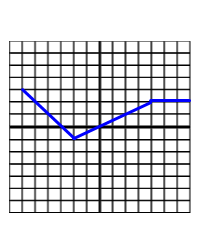
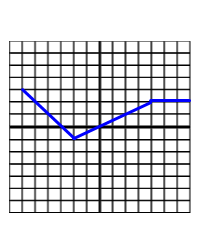
28. Factor the quadratic binomial: x2 - 49

A. (x – 14)(x + 14) B. (x – 7)(x – 7) C. (x – 4)(x – 9) D. (x – 7)(x +7)

29. Use the Zero-Product Property to find the zeros for the function f(x) = x2 +3 x – 18

A. 3, -6 B. -3, -6 C. -3, 6 D. -3, 6

30. Solve the equation by completing the square. Give the exact solutions. x2 - 2x = 35

A. 5, 7 B. -5, -7 C. -5, 7 D. 5, -7