Semester 1 Algebra 2 Review

Roots are another name for _____.

Simplify

1. $4x(2x+3)-x^2$

2. $6x^3+4x(x^2-4)+7$

Solve the equation for y. Then find the value of y for the given value of x.

3. $2x^2+3y=9$; $x=-3$

Identify the domain and range

4. (0,2), (1,0), (3, -2), (-1,1)

Find the slope.

5. (-1, -3), (1, -2)

Write the equation of the line.

6. M= -1/3, b=2

7. That passes through (4,1) and is perpendicular to y=1/3x+3

Factor. If not factorable, write *prime*.

8. $2x^3 + 16$

9. $x^3 - 6x^2 + 3x - 18$

10. $x^2 + 36$

Graph.

11. f(x)=-|x+3|-2

12. x+2y=3

Solve by graphing.

13. y=-x+1 & y=x-1

Solve using any algebraic method.

14. x+2y=5
    -2x+3y=-3

15. -2x-3y=7
    4x+y=1

Perform the indicated operation. If not possible, write not possible.

16. $\begin{bmatrix} 2 & 4 & 3 \\ 1 & 3 & -5 \end{bmatrix} + \begin{bmatrix} 2 & 3 \\ 1 & 1 \end{bmatrix}$

17. $\begin{bmatrix} -1 \\ 3 \\ -4 \end{bmatrix} \cdot \begin{bmatrix} 1 & 0 & -2 \end{bmatrix}$

Solve for x and y.

18. $\begin{bmatrix} 7 & 3 \\ 5 & 1 \end{bmatrix} - x \begin{bmatrix} 2 & 0 \\ -1 & 1 \end{bmatrix} = \begin{bmatrix} y & 3 \\ 8 & -2 \end{bmatrix}$

Find the determinant.

19. $\begin{bmatrix} 2 & 4 \\ -1 & -2 \end{bmatrix}$

20. $\begin{bmatrix} -2 & 6 & 0 \\ 8 & 15 & 3 \\ 4 & -1 & 7 \end{bmatrix}$

Find the inverse

21. $\begin{bmatrix} 4 & 7 \\ 2 & 6 \end{bmatrix}$

Graph the function.

22. y=-2(x-1)(x-2)

23. $y=1/2(x+1)^2-2$

Simplify.

24. $\sqrt{\frac{13}{28}}$

25. $\frac{2}{1-i}$

26. List all the possible rational roots of the polynomial $6x^5 + 3x^3 + 2x - 5$

Solve.

27. j^2-3j-10

28. -2x^2+6x+56

29. 25x^2=16

30. x^2+2x-35=0

Solve by completing the square.

31. x^2+9x+9=0

Find the discriminant and give the # and type of solutions.

32. 3p^2-6p+8=0

Evaluate/simplify.

33. 39) $(5^5)(5^{-2})$

34. $(7^4)^2$

35. $\frac{(3x^3yz^2)(x^4y)^3}{-4x^{-5}y^{-2}}$

36. $(x-6)(x^2-8x+9)$

37. Find the minimum or maximum of the equation $y = 3x^2 + 10x - 3$

38. $Graph\ f(x) = 2(x-1)(x+3)^2$