

MAT 0024 Review 1

1. Translate:
- 5 less than twice a number
 - 2 times the sum of a number and 4
 - a number increased by 3
 - the product of 5 and a number
 - the difference of a number and 1

2. Use the formula $\text{Area} = l \cdot w$ (l = length, w = width) to find the area of a rectangle 5 feet long and 3 feet wide.

3. Evaluate:

$$\frac{9}{5}c + 32 \quad \text{when } c = 50$$

4. Evaluate:

$$a^2 - 3b \quad \text{when } a = 2, b = -4$$

5. Simplify:

a. $-|-3|$

b. $|-4 - 3|$

c. $|-2| - |5|$

6. Explain the difference between -4^2 and $(-4)^2$

7. Write $\frac{1}{9}$ as a decimal.

Perform the indicated operations:

8. $-6 + (-3)$

9. $5 + (-9)$

10. $-6 + 7 + (-9) + 5$

11. $-\frac{3}{4} + \frac{7}{12}$

12. $4 - 7$

13. $3 - (-5)$

14. $-4 - 3$

15. $(-2)(3)(-1)(3)$

16. $(43.8)(-1.2)$

17. $\frac{-7}{12} \div \frac{2}{3}$

18. $\frac{-12}{-4}$

19. $\frac{-2}{10}$

Simplify:

20. $16 \div 2 [8 - 3(4 - 2)] + 7$

21. $(-3)^2 + 4 [18 + (12 - 20)]$

22. $14 - \frac{15 - 1}{2^3 - 1} + 7$

23. $3x + 7y - 2x + y$

24. $-7x^2 - 3x + 2x^2 + 4x - 1$

25. $-3(2x^2 + 4x - 1)$

26. $4(x - 2y) - 2(3x + y)$

27. $2y - 3[4(y + 1) + 5]$

28. $4x - 2[x - 3(5 - x)]$

29. Is -2 a solution of $2x + 8 = 2$?

Solve:

30. $-5x + 6 = 31$

31. $13 = 5n - 3 - n$

32. $-2x - 3 = 3x + 7$

33. $6y - 1 = 2y + 2$

34. $\frac{x}{8} + \frac{1}{2} = \frac{9}{4}$

35. $\frac{7}{4}x - 3 = 5$

36. $5y - 9 + 4y = 15 + y$

37. $16 - (3x - 10) = 5$

38. $3(3x + 1) = 3(2x + 7) - 3x$

39. $6[x - (2x + 3)] = 8 - 5x$

40. Solve for "R"

$$P = I^2R + 10$$

41. Solve for "B"

$$A = \frac{1}{2} B H$$

42. Solve for "w"

$$B(3 + 2w) = 25$$

43. Solve for "B"

$$B(3 + 2w) = 25$$

44. Solve for "V₂"

$$a = \frac{V_2 - V_1}{t}$$

45. Which number systems contain -2 ?

46. Solve: $3x + 1 = 3(x - 2)$

47. Solve: $3x - 4 + 2x = 5x - 3 - 1$

48. Solve and graph:
 $-4x + 3 < 7$

49. Solve and graph:
 $-3 \leq 2x + 1 < 7$

50. $.2x - .1 = .6x - 2.1$

51. Geometry word problem
(review handout)

If the length of a rectangular parking lot is 10 meters less than twice its width, and the perimeter is 400 meters, find the length of the parking lot.

52. Simplify:
 $4 + \sqrt{1 + 8 \cdot 6} - 2$

Solutions

1. a. $2x - 5$
b. $2(x + 4)$
c. $x + 3$
d. $5x$
e. $x - 1$

2. 15 ft^2

3. 122

4. 16

5. a. -3
b. 7
c. -3

6. $-4^2 = -(4 \cdot 4) = -16$
 $(-4)^2 = (-4)(-4) = 16$

7. $\bar{1}$

8. -9

9. -4

10. -3

11. $-\frac{1}{6}$

12. -3

13. 8

14. -7

15. 18

16. -52.56

17. $-\frac{7}{8}$

18. 3

19. $-\frac{1}{5}$

20. 23

21. 49

22. 19

23. $x + 8y$

24. $-5x^2 + x - 1$

25. $-6x^2 - 12x + 3$

26. $-2x - 10y$

27. $-10y - 27$

28. $-4x + 30$

29. NO

30. $x = -5$

31. $4 = n$

32. $x = -2$

33. $y = \frac{3}{4}$

34. $x = 14$

35. $x = \frac{32}{7}$

36. $y = 3$

37. $x = 7$

38. $x = 3$

39. $x = -26$

40. $\frac{P-10}{I^2} = R$

41. $\frac{2A}{H} = B$

42. $w = \frac{25-3B}{2B}$

43. $B = \frac{25}{3+2w}$

44. $at + v_1 = v_2$

45. Integers, Rationals, Reals

46. No Solution

47. All Real Numbers

48. $x > -1$

49. $-2 \leq x < 3$

50. $x = 5$

51 length = 130 meters

52. 9