

Solve for the stated variable. State restrictions on the variables.

1. Solve for  $T$ .  $\frac{C+AT}{M} - 7 = W$

2. Solve for  $K$ .  $E(K+5R) = \frac{C}{N}$

3. Solve for  $R$ .  $RW + CR = MK$

4. Solve for  $Q$ .  $\frac{7+C}{Q} - E = X$

Solve each inequality.

5.  $4x - 7(x+2) < 16$

6.  $6k - 9 + 2k \geq 8k + 7$

7.  $4(y-6) + y \leq 3(2y+5) - y$

8.  $7 + 9a - 2(a+5) - a > 6a + 3$

State the solution to each compound inequality. State the answer as a single statement, if possible.

9.  $2R - 1 < -11$  AND  $R \geq 6$

10.  $3E + 9 > -3$  OR  $-2E + 1 > 5$

11.  $7W < 14$  AND  $W > -3$

12.  $A < 12$  OR  $A - 6 < -3$

13.  $K \geq 7$  AND  $-3K \leq 12$

14.  $2E - 1 \geq 13$  OR  $E \leq 1$

15.  $-19 < 4c + 11 \leq 47$

For 16-20 evaluate each expression for  $x = -12$   $y = 4$   $a = 5$   $b = -32$  Give the exact value of each (no rounded answers).

16.  $a^2 - x|b - y|$

17.  $-b - 3y^2$

18.  $(2x)^2 - ya^3$

19.  $-|a| + |-x + b|$

20.  $\frac{-b^2 - ax}{|x + y| - |b|}$

Simplify each expression. For expressions with one variable write answer in Standard Form.

21.  $x^2 + 2x^3 - 6x + 14x^2 - 9x^3 + x - 15x^2$

22.  $9ef + 2e - 8e + 4f - e + 2ef + 9f$

23.  $mn^2 - 4mn + 5m^2n - 9mn + 4m^2n + 12mn^2$

24.  $\frac{2}{3}(6Q + 27) - 2(3Q - 7) + 20 - 4Q$

25 State ALL the subset(s) of the Real Numbers to which each belongs.

a) 4.51

b) 18.656565

c)  $\frac{-729}{3}$

d)  $\sqrt{676}$

e)  $\sqrt{3}$

26. The perimeter of a rectangle is 49. The sides have a ratio of 5 : 2. Write and solve an equation to find the dimensions of the rectangle.

27. The perimeter of a triangle is 133. The sides have a ratio of 4 : 6 : 9. Write and solve an equation to find the lengths of the sides of the triangle.

28. Four consecutive integers have a sum of 1490. Write and solve an equation to find these numbers.

29. Five consecutive multiples of four have a sum of -260. Write and solve an equation to find these numbers.

30. Four consecutive odd numbers have a sum of 776. Write and solve an equation to find these numbers.

31. The perimeter of a rectangle is 88 inches. The width is 8 inches more than three times the length. Write and solve an equation to find the dimensions of the rectangle.

## Algebra 2A Quiz #1 Review

## ANSWERS

Sec 1-1 to 1-4 Fall 2016

$$1. T = \frac{M(W+7) - C}{A} \quad A, M \neq 0 \quad 2. K = \frac{C}{NE} - 5R \quad \text{or} \quad K = \frac{\frac{C}{N} - 5ER}{E} \quad N, E \neq 0$$

$$3. R = \frac{MK}{W+C} \quad W+C \neq 0 \quad 4. \frac{7+C}{X+E} \quad X+E \neq 0, Q \neq 0$$

$$5. x > -10 \quad 6. \text{No Sol} \quad 7. \text{All Real Numbers} \quad 8. \text{No Solution}$$

$$9. \text{No Sol} \quad 10. \text{All Real Numbers} \quad 11. -3 < W < 2 \quad 12. A < 12 \quad 13. K \geq 7$$

$$14. E \leq 1 \quad \text{or} \quad E \geq 7 \quad 15. -7.5 < c \leq 9$$

$$16. 457 \quad 17. -16 \quad 18. 76 \quad 19. 15 \quad 20. \frac{241}{6}$$

$$21. -7x^3 - 5x \quad 22. -7e + 11ef + 13f \quad 23. 9m^2n + 13mn^2 - 13mn \quad 24. -6Q + 52$$

$$25. \begin{array}{lll} \text{a) Rational} & \text{b) Rational} & \text{c) Integer, Rational} \\ \text{d) Natural, Whole, Integer, Rational} & & \text{e) Irrational} \end{array}$$

$$26. \text{EQ: } 5x + 2x + 5x + 2x = 49 \quad \text{Dimensions: } 7 \times 17.5$$

$$27. \text{EQ: } 4x + 6x + 9x = 133 \quad \text{Sides: } 28, 42, 63$$

$$28. \text{EQ: } \underline{x} + \underline{x+1} + \underline{x+2} + \underline{x+3} = 1490 \quad \text{\#s: } 371, 372, 373, 374$$

$$29. \text{EQ: } \underline{x} + \underline{x+4} + \underline{x+8} + \underline{x+12} + \underline{x+16} = -260 \quad \text{\#s: } -60, -56, -52, -48, -44$$

$$30. \text{EQ: } \underline{x} + \underline{x+2} + \underline{x+4} + \underline{x+6} = 776 \quad \text{\#s: } 191, 193, 195, 197$$

$$31. \begin{array}{ll} \text{1st eq: } 2L + 2W = 88 & \text{2nd eq: } W = 3L + 8 \\ \text{Using substitution: } 2L + 2(3L + 8) = 88 & \\ L = 9, W = 35 & \text{Dimensions: } 9 \times 35 \end{array}$$