

NO CALCULATOR CAN BE USED ON THIS TEST

Write an algebraic expression to model each phrase EXACTLY as written.

1. The sum of R and 12.
2. The product of 2 and a number.
3. The quotient of 36 and a number.
4. Four less than K.
5. Six more than twice a number.
6. The product of 8 and the quantity Q minus 3.

Simplify each using order of operations.

7. $-3 - 5$
8. $6 - 8$
9. $-4 + 9$
10. $6 - -2$
11. $-7 - -3$
12. $(-3)(6)$
13. $\frac{-10}{-2}$
14. $10 + 20 \div (2 + 3 \cdot 6)$
15. $10 - 3 + 6 - 2 + 1$
16. $36 \div 9 \cdot 4 \div 2$
17. $40 - (30 - 5)$
18. $4 + 3(9 - 7)$
19. $11 - 2(12 - 3^2 + 1)$
20. $10 - (24 \div (2 \cdot 4)) + 2$
21. $3 + 8 \div 2 \cdot 2$
22. $[2 + 4 \cdot (6 - 3)] \div 2 \cdot 3$
23. $2(20 - (3 + 1)^2) + 11$
24. $|-3| + |4|$
25. $|7| - |-3| + |-1|$
26. $|-7 + 2| + |-1|$

Evaluate for $x = -2$ $y = 4$ $a = 5$ $b = -3$

27. $xy + a$
28. $b^2 - x$
29. $2a^2 + bx$
30. $(2x)^2 - b$
31. $-b + a - y$
32. $abx + 2y$
33. $2|x| - |3b|$

Simplify by using the distributive property.

34. $2(x - 7)$
35. $-(3m + 2)$
36. $-5(-2n + 3)$
37. $3y(y - 2)$
38. $\frac{1}{3}(6x - 12)$
39. $\frac{5}{6}(24c + 12)$
40. $\frac{7}{9}(6k - 45)$

Simplify by combining like terms. You may have to use the distributive property first.

41. $4a - 8 + 9a + 3 - 10 - a$
42. $12M + N - 9 + 2N + M - 2 + 8M$
43. $8y + 2y^2 - 12y - y + 8y^2$
44. $x^2 + 2x^3 - 6x + 14x^2 - 9x^3 + x - 15x^2$
45. $9ef + 2e - 8e + 4f - e + 2ef + 9f$
46. $mn^2 - 4mn + 5m^2n - 9mn + 4m^2n + 12mn^2$
47. $5(Q + 2) - 2(3Q - 7) + 20 - 4Q$
48. $R + 4 - (5 - R) + \frac{2}{3}(4R + 9) - \frac{1}{6}$

Write an equation and define the variables for each situation.

49. There are 24 hours in each day. Write an equation for the number of days in an unknown number of hours.
50. There are 2.54 cm in each inch. Write an equation for the number of cm in an unknown number of inches.
51. There are 4 less students in Astronomy class than there is in Gym class. Write an equation for the number of students in Astronomy class.
52. Write an equation for the relationship between the number of Hexagons and the number of Popsicle Sticks.

# of Hexagons	Number of popsicle sticks
4	24
5	30
8	48
11	66

53 State ALL the set(s) of numbers to which each belongs. Choose from: Natural #'s, Integers, Whole #'s, Rational #'s, Irrational #'s.

- a) 4.51 b) $18.6565\overline{65}$ c) $\frac{-39}{3}$ d) $\sqrt{4}$ e) $\sqrt{3}$

Algebra 1

Chapter 1

Review

Fall 2015

ANSWERS

NO CALCULATOR WILL BE USED ON THIS TEST

1. $R + 12$ 2. $2w$ 3. $\frac{36}{A}$ 4. $K - 4$ 5. $2B + 6$ 6. $8(Q - 3)$

7. -8 8. -2 9. 5 10. 8 11. -4 12. -18

13. 5 14. 11 15. 12 16. 8 17. 15 18. 10

19. 3 20. 9 21. 11 22. 21 23. 19 24. 7

25. 5 26. 6

27. -3 28. 11 29. 56 30. 19 31. 4 32. 38 33. -5

34. $2x - 14$ 35. $-3m - 2$ 36. $10n - 15$ 37. $3y^2 - 6y$ 38. $2x - 4$

39. $20c + 10$ 40. $\frac{14}{3}k - 35$

41. $12a - 15$ 42. $21M + 3N - 11$ 43. $-5y + 10y^2$ 44. $-7x^3 - 5x$

45. $11ef - 7e + 13f$ 46. $13mn^2 - 13mn + 9m^2n$ 47. $-5Q + 44$ 48. $\frac{14}{3}R + \frac{29}{6}$

49. $D = \# \text{ days}$ $H = \# \text{ hours.}$ EQ: $D = \frac{H}{24}$

50. $C = \# \text{ cm}$ $i = \# \text{ inches}$ EQ: $C = 2.54i$

51. $A = \# \text{ students in Astronomy}$ $G = \# \text{ students in Gym}$ EQ: $A = G - 4$

52. $P = \# \text{ popsicle sticks, H} = \# \text{ hexagons}$ EQ: $P = 6H$

53. a) Rational b) Rational c) Rational, Integer
d) Rational, Integer, Whole #, Natural # e) Irrational