

Name _____

Algebra 2 Readiness Skills Review, Summer

Perform the operation. You MUST show your work. Write the answers in simplified form.

1) $\frac{7}{8} + \left(-\frac{7}{8}\right)$

2) $\left(-\frac{1}{7}\right) + \left(-3\frac{2}{3}\right)$

3) $\frac{3}{7} - \left(-\frac{3}{2}\right)$

4) $(-1) - 1\frac{3}{8}$

Find each product.

5) $-\frac{16}{11} \times -\frac{12}{11}$

6) $8\frac{11}{15} \times -\frac{14}{13}$

Find each quotient.

7) $1 \div \frac{4}{5}$

8) $\frac{7}{9} \div \frac{1}{3}$

Use order of operations (PEMDAS) to simplify the expression. You MUST show all your work.

9) $6 - 6 - 6 - 6 \times 3$

10) $6 - \left(\frac{12}{-2} - (1 - 1)\right)$

11) $\frac{8 + (-8) - (-5)}{(-1) + 6}$

12) $-\frac{6 \times 2}{2 + (-2) - 3}$

Evaluate each using the values given.

13) $z + x + y + z$; use $x = -1$, $y = -5$, and $z = -2$

14) $x + 4 + z + x$; use $x = -6$, and $z = 3$

15) $z(z - y) - 4$; use $y = 1$, and $z = 6$

16) $y - (x - (-4 - x))$; use $x = 2$, and $y = -6$

Evaluate each expression.

17) $2 - 6 \div 6$

18) $6 - (4 - 2)$

19) $1 - (-8) - \frac{12}{-3}$

20) $9 - \frac{24}{-8} - (-5)$

Evaluate each using the values given.

21) $-5x^2 - (x + y)$; use $x = -2$, and $y = 5$

22) $|-5|\left(\frac{n}{3} - p\right)$; use $n = -9$, and $p = 2$

Solve each proportion.

23) $\frac{v-3}{v+5} = -\frac{12}{7}$

24) $\frac{11}{b-1} = \frac{6}{b+1}$

Solve each equation.

25) $6x - 5x = 0$

26) $17 = n + 2 + 4n$

27) $-2(2m + 7) = -28 - 6m$

28) $25 + r = -5(2 + 8r) + 6r$

29) $-6n - 12(-11n + 8) = -10(n - 4)$

30) $-28x + 6 = -3(1 + 7x) - 7x$

Solve each equation.

31) $-40 + 4a = 4a + 5(a - 2)$

32) $-24 - 6x = -3(8 - 8x)$

Simplify each expression.

33) $10v + 8v$

34) $5n - 1 + 3$

35) $4(1 + 8x) - 9(9x + 2)$

36) $-3(2b - 6) - (5b + 5)$

Solve

37) $\frac{3}{2} = r + \frac{1}{2}$

38) $\frac{1}{3}x = -\frac{5}{12}$

39) $\frac{19}{20} = p - 1\frac{1}{4}$

40) $b + 1 = -2\frac{1}{3}$

41) Solve for n: $7(n - 2) + 2n(15 - 8) = 6(2n + 4)$

42) $\frac{m}{19} + 27 = 215$

Find the Greatest Common Factor of each.

43) 68, 34

44) 54, 27

45) 55, 75

46) $36xy^2$, $24y^2$

47) $80x^3$, $30x^2y$

Find the Lowest Common Multiple of each.

48) 4, 30

49) 24, 32

50) 20, 30

51) 24, 36

52) 35, 25

Simplify radicals.

53) $\sqrt{18} \cdot \sqrt{50}$

54) $\sqrt{12} \cdot \sqrt{48}$

55) $\sqrt{15} \cdot \sqrt{50}$

56) $\sqrt{72}$

57) $\sqrt{75}$

Use Laws of Exponents to simplify each expression.

58) $\frac{24x^3y^{-6}}{8x^{-2}y^3z^4}$

59) $n \cdot n^3 \cdot 2n$

60) $2x^3 \cdot 3x$

61) $\frac{(-2x^4y^2)^3}{2y^{-2} \cdot 2x^{-2}y^2}$

62) $2u^0v^5 \cdot (2u^5v^3)^3$

Find each product.

63) $(-5p + 8)(7p - 5)$

64) $(m + 3)^2$

65) $(4n - 6)(6n^2 + 3n + 8)$

Factor completely.

66) $p^2 - 9p + 18$

67) $x^2 - 8x - 9$

68) $15v^2 + 132v + 96$

69) $5n^2 - 8n - 21$

70) $6r^2 + 53r - 70$

71) $-30a^2 + 51a - 18$

72) $4x^2 - 25$

73) $4p^2 + 12p + 9$

74) $18b^2 - 2$

75) $9x^2 + 24x + 16$

Solve each by factoring.

76) $(3x + 1)(x + 4) = 0$

77) $(r - 1)(r + 1) = 0$

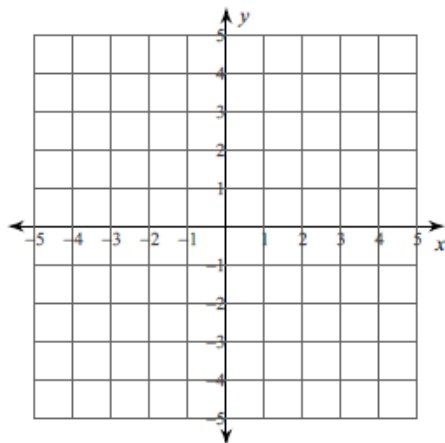
78) $v^2 - 8v + 7 = 0$

79) $x^2 + 7x = 8$

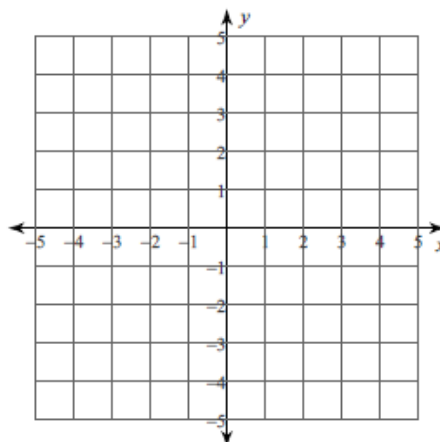
80) $n^2 = -9 - 6n$

Solve each system by graphing.

81) $y = \frac{1}{3}x + 4$
 $y = -\frac{4}{3}x - 1$



82) $y = -x + 1$
 $y = -\frac{1}{4}x - 2$



Solve each system by substitution.

83)
$$\begin{aligned} x + 5y &= 20 \\ -3x - 5y &= -20 \end{aligned}$$

84)
$$\begin{aligned} 7x + y &= 7 \\ -7x - 8y &= -7 \end{aligned}$$

Solve each system by elimination.

85)
$$\begin{aligned} 5x + y &= -13 \\ x + 2y &= 1 \end{aligned}$$

86)
$$\begin{aligned} 6x - 9y &= -30 \\ -x + 18y &= 5 \end{aligned}$$

87) Write an equation that represents the line that passes through $(-5, 1)$ and is parallel to the graph of $y = -2x + 5$.

88) What is the slope of the equation: $3x + 4y = -2$?

89) Which of the following describes a linear function?

A) $3(x + 2y) - 4 = x + 5y$

B) $ax^2 + bx + c = 0$

C) $(a + b)^2$

D) $A = \pi r^2$

90) Which table does NOT represent a function?

A

x	y
1	1
2	1
3	2
4	2

C

x	y
1	1
1	2
2	3
2	4

B

x	y
2	3
1	1
0	0
-1	1

D

x	y
-1	-3
0	-2
1	-1
2	6

91) Solve for t given the formula: $d = rt$

92) Solve for w given the formula: $P = 2l + 2w$

93) Solve for p given the formula: $t = \frac{wp^2}{32r}$

94) Solve for h given the formula: $V = \pi r^2 h$

95) Which of the following statements is true about the equation: $8 - (7 - 6x) = 9x - (4x + 3x)$?

A) The equation has one solution

B) The equation has an infinite number of solutions.

C) The equation has no solution

D) The equation has two solutions.