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Summer Packet

Date_____ Period____

Evaluate each expression.

1) $(5-3)^2$

2) $7 \times -6 - (-6 - -8 \times -9)$

3) $9 \times (9-6)(-5 - -2)$

4) $\dfrac{-18 - (-1 - -5 + 6)}{2^2}$

5) $\left(2 + 3\dfrac{1}{4}\right)^2$

6) $\left(3\dfrac{1}{3} - \dfrac{2}{3}\right)^2$

7) $9 \div \left((4-4)^2 + 3\right)$

8) $15 \div (4 - (5-4))$

9) $3\dfrac{1}{3}\left(\dfrac{9}{5} + \dfrac{7}{6}\right)$

10) $\dfrac{5}{4} \div 2\dfrac{3}{4} \times \dfrac{5}{3}$

Evaluate each using the values given.

11) $y + \dfrac{6}{z}$; use $y = 1\dfrac{1}{6}$, and $z = 5$

12) $6 + pr$; use $p = 6$, and $r = 4$

Simplify each expression.

13) $4 - 5n + 5n + 3$

14) $-(8b - 7)$

15) $-5(-6n - 4)$

16) $-4(7n + 3) - 4(10n - 10)$

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Write each as an algebraic expression.

17) the difference of a number and 5 is 27

18) 16 less than b is equal to 36

19) half of a number is equal to 30

20) the product of a number and 5

21) the sum of a number and 11 is equal to 49

Write each as a verbal expression.

22) $n - 16 = 37$

23) $n + 5 = 7$

Simplify each expression.

24) $-2(n - 4) - 2n$

25) $-7(8v + 9) - 5(4v - 6)$

Solve each TWO STEP equation.

26) $2 = \frac{3 + n}{2}$

27) $8 + \frac{x}{10} = 9$

Solve each MULTI STEP equation with the variable on ONE side.

28) $4x - x = 15$

29) $-4(-1 - x) + 5(6x + 8) = -24$

Solve each MULTI STEP equation with the variable on BOTH sides.

30) $11 + 2x = x + 7$

31) $-8(8 + n) = 5n - 38$

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32) $7 + 2r - 7 + 6r = 5(r - 6) + 6(r + 7)$

33) $8(-4a + 8) = 4(2 + 6a)$

Solve each proportion.

34) $-\frac{8}{6} = \frac{9}{v}$

35) $\frac{10}{7} = \frac{9}{b - 8}$

36) $\frac{2}{r - 2} = -\frac{9}{2}$

37) $\frac{x + 5}{x - 10} = \frac{8}{10}$

Solve each problem.

38) What is 55% of 10?

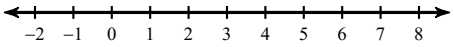
39) 15% of what is 14?

40) 72% of what is 157?

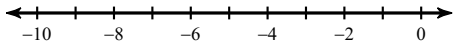
41) 57 is what percent of 115?

Solve each inequality and graph its solution.

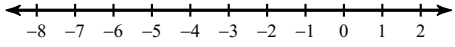
42) $312 \leq -6(-4 - 8m)$



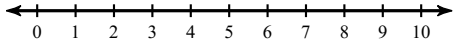
43) $-7n - 6(-7n - 1) > -134$



44) $3 - 7(2x - 7) > 122$



45) $126 \leq 6(3k - 3)$



Solve each equation for the indicated variable.

46) $z = am$, for a

47) $3m + 2x = -3$, for x

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Find the slope of each line.

48) $5y + 9x = 20$

49) $-2x = -5y + 10$

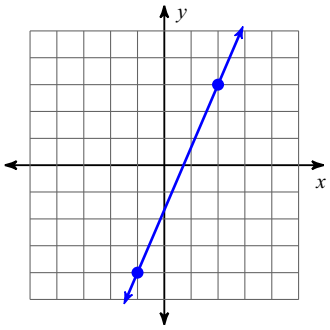
Find the slope of the line through each pair of points.

50) $(1, -8), (5, -18)$

51) $(12, 12), (15, 5)$

Find the slope of each line.

52)



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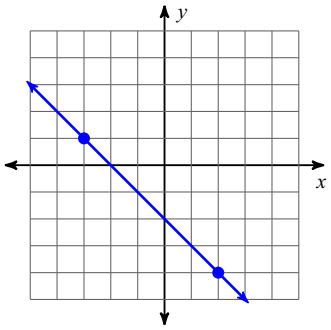


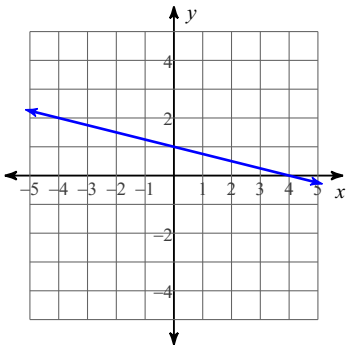
Write the slope-intercept form of the equation of each line given the slope and y-intercept.

54) Slope $= \frac{7}{4}$, y-intercept $= -3$

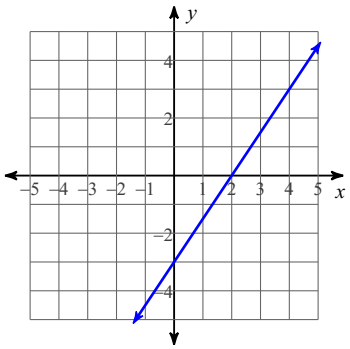
55) Slope $= -\frac{3}{4}$, y-intercept $= 0$

Write the slope-intercept form of the equation of each line.

56)



57)



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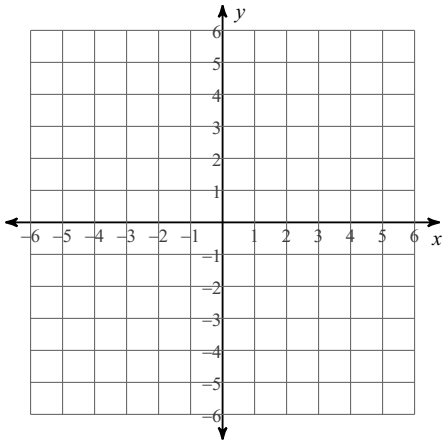
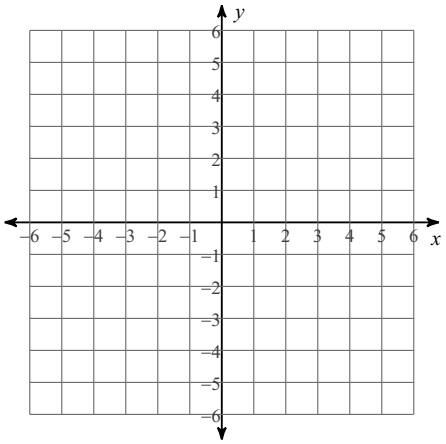
Sketch the graph of each line.

58) $y = 2x + 1$



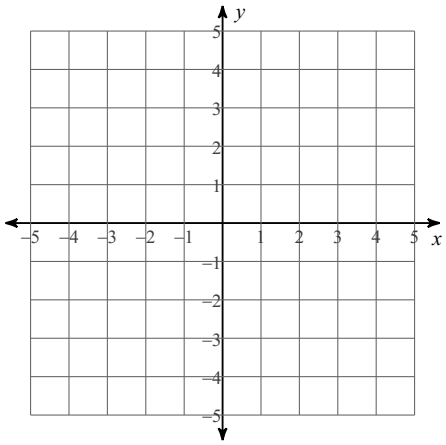
59) $2x + 3y = -6$



Solve each system by graphing. Show your Graph

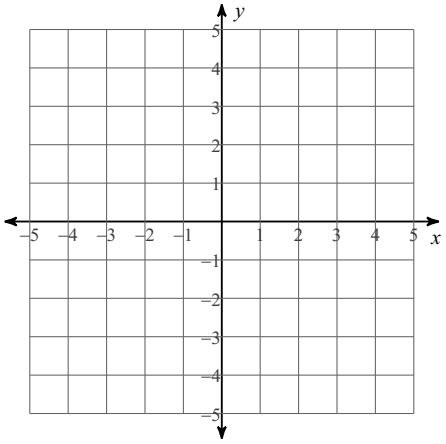
60) $y = -\frac{3}{4}x - 4$

$y = \frac{1}{2}x + 1$



61) $4x - 3y = -6$

$x - 3y = 3$



Solve each system by elimination.

62) $8x + 5y = -22$

$-3x - 5y = 2$

63) $8x - 5y = 20$

$5x - 5y = 20$

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Solve each system by substitution.

64) $-4x - 8y = -12$
$y = -2x + 3$

65) $x - 2y = -3$
$7x - 2y = 3$

66) The water park is a popular field trip destination. This year the senior class at High School A and the senior class at High School B both planned trips there. The senior class at High School A rented and filled 10 vans and 7 buses with 348 students. High School B rented and filled 10 vans and 10 buses with 420 students. Each van and each bus carried the same number of students. Find the number of students in each van and in each bus.

67) The state fair is a popular field trip destination. This year the senior class at High School A and the senior class at High School B both planned trips there. The senior class at High School A rented and filled 9 vans and 13 buses with 711 students. High School B rented and filled 9 vans and 3 buses with 261 students. Every van had the same number of students in it as did the buses. Find the number of students in each van and in each bus.

68) Stephanie and James are selling wrapping paper for a school fundraiser. Customers can buy rolls of plain wrapping paper and rolls of holiday wrapping paper. Stephanie sold 9 rolls of plain wrapping paper and 4 rolls of holiday wrapping paper for a total of $130. James sold 5 rolls of plain wrapping paper and 8 rolls of holiday wrapping paper for a total of $182. What is the cost each of one roll of plain wrapping paper and one roll of holiday wrapping paper?

Simplify using the product property.

69) $3a \cdot 4a^3$

70) $4x \cdot 2x^3$

Simplify using the power property.

71) $(3x)^4$

72) $(x^3)^2$

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Simplify using the quotient property.

73) $\dfrac{3a^3}{4a^5}$

74) $\dfrac{8x^5}{7x^9}$

Simplify. Your answer should contain only positive exponents.

75) $\dfrac{v}{(2u^3)^2 \cdot 2u^2}$

76) $\dfrac{x^{-3}}{x^3 \cdot (2x^{-1})^{-4}}$

77) $\left(\dfrac{yx^{-4} \cdot x^2y^2}{2yx^2}\right)^0$

78) $\dfrac{xy^{-4} \cdot 2y^4}{(2x^{-4})^{-2}}$

Simplify each expression.

79) $(4 - 8a^4 + 7a) + (a^2 - 1 - 3a^4)$

80) $(3 + 7n^3) - (3n^3 + 7) - (n^3 - 2)$

81) $(3x^2 - 8x^4 + 5x) + (2x^3 + x^4 - 6x)$

82) $(3p - 3p^2) + (6p^2 - 3p) - (2p + 6)$

Find each product.

83) $6n(8n - 6)$

84) $-8x(-3x^2 - 8x - 1)$

Factor the common factor out of each expression.

85) $28k^7 + 24k^2$

86) $8u^2v + 12uv - 32u$

87) $18x^{10} + 3x^5 - 6x^2 - 30x$

88) $24v^4 + 60v^2 + 18v + 30$

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Find each product.

89) $(2n - 8)(7n + 7)$

90) $(6n - 7)(8n + 2)$

91) $(8n - 5)(5n^2 - 6n + 4)$

92) $(5x - 4)(7x^2 + 6x + 3)$

93) $(5n + 4)(5n - 4)$

94) $(5n - 4)^2$

95) $(2v + 1)^2$

96) $(6b - 4)(6b + 4)$

Factor each completely.

97) $3v^2 + 5v + 2$

98) $2a^2 - 11a + 15$

99) $x^2 + x - 12$

100) $a^2 + 2a - 8$

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