Summer Math Skills Review
For Integrated 3

Name: _____

Solve.

1. $5x + 4 = 19$

2. $53 - p = 11$

3. $3(k - 2) = k + 4$

4. $\dfrac{3}{4}y = \dfrac{2}{3}y + 5$

5. $8g - 4 = 5(2g + 1)$

6. $15 - 6n + 2 = 4n - 1$

7. $\dfrac{-c + 14}{5} > 8$

8. $7 \le 4w + 3 \le 19$

9. $|d| - 5 = -3$

10. $|m + 6| = 11$

11. $|2a - 1| < 5$

12. $4x^2 - 1 = 63$

Name the sets of numbers to which each belongs.
(choose from: real, rational, irrational, integer, whole, natural)

13.   −43

14.   π

15.   0

16. $\dfrac{3}{8}$

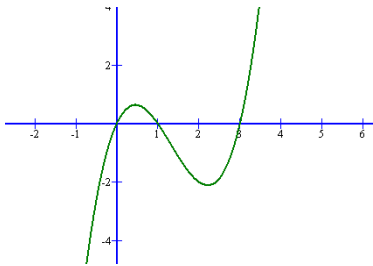## Evaluate if: $a = -5$, $b = \dfrac{1}{4}$, $c = \dfrac{1}{2}$, and $d = 4$.

17. $a + 2b - c$

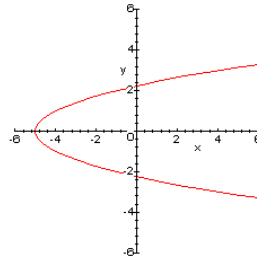18. $b + 3(a + d)^3$

Determine whether each relation is a function.

19.   (5, 4), (−2, 6), (0, −8), (−2, 1)

20.

21.

Find the mean, median, mode, and range for each set of data.

22.   {2, 8, 12, 13, 15}

23.   {-5, -4, 3, -10, -4, -7, 12}

24.   What is the slope of the line passing through (5,-3) and (9,-4)?

25.   What is the slope of a horizontal line?

26.   What is the slope of a vertical line?

27.   How are the slope of parallel lines related?

28.   How are the slopes of perpendicular lines related?

Write the equation of a line that satisfies the following conditions.
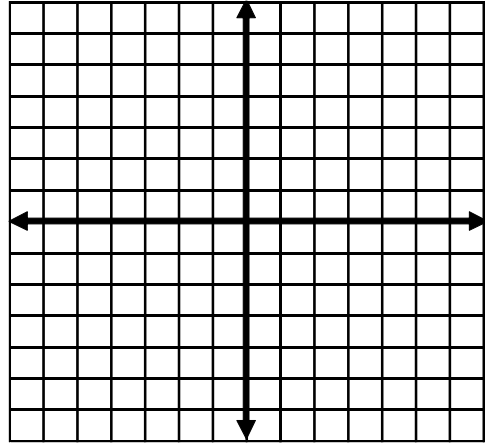
29. slope = 9; y-intercept = 17

30. slope = $\dfrac{1}{3}$; passes through (–9, 4)

31. passes through (–1, –7) and (1, 3)

32. perpendicular to $y = 4x + 3$; passes through (8,5).
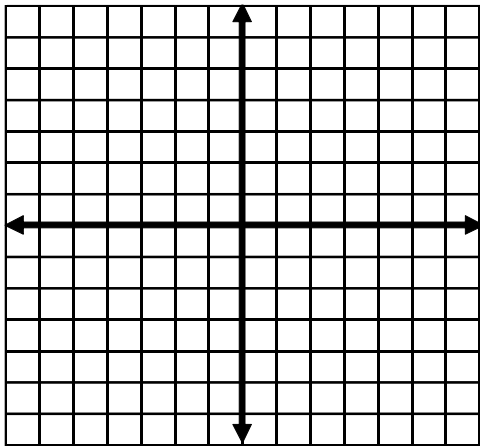
Graph on a coordinate plane.
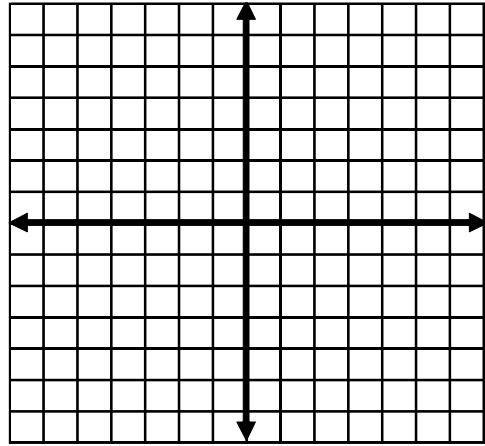
33. $y = 5x - 3$
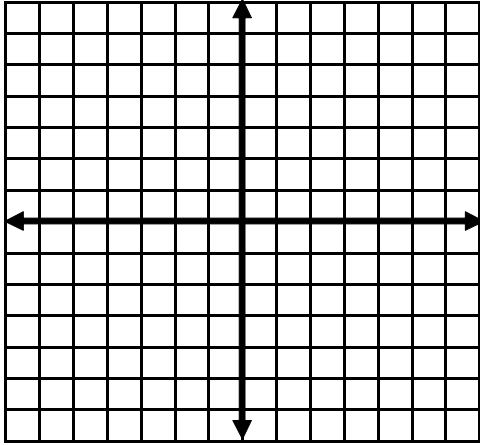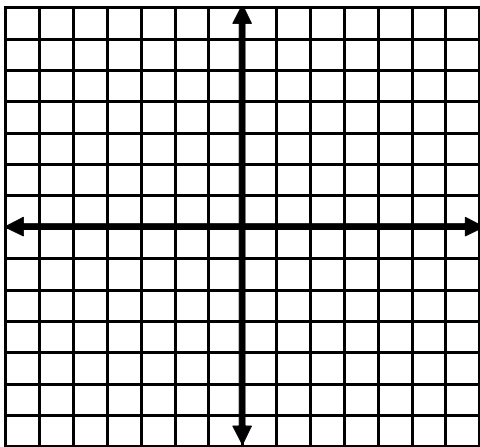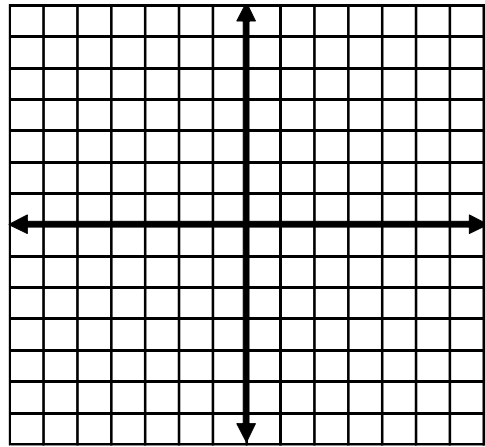
34. $y = -\dfrac{1}{4}x + 2$

35. $x = -6$

36. $3x - 2y = -12$

37. $y = 2x^2 - 3$

38. $y > -x^2 + 4$

Solve each system of equations.

39. $2x - 4y = 9$
    $3x + 4y = 1$

40. $x = 4y - 10$
    $5x + 3y = -4$

41. $x = -3y$
    $2x + 6y = 5$

42. $3x + 4y = 28$
    $5x - 3y = -21$

Simplify. Answers should have only positive exponents.

43. $(2y)^3$

44. $(-3c^2d^0)^4$

45. $\dfrac{ab^4c^{-5}}{-2b^3}$

46. $\dfrac{3x^{-2}}{x^{-1}}$

47. $(x^4y^2)^2(x^3y)^4$

48. $\dfrac{3x^3y^4}{9xy^5}$

Find each product.

49. $5x^2(2x^2 - x)$

50. $4t(t^2 + 7)$

51. $(x + 3)(2x - 4)$

52. $(5x - 2)(3x - 4)$

53. $(2x^2 + 1)(x - 3)$

54. $(3x + 8)^2$

Factor each expression.

55. $6x^2 + 8$

56. $8x^6 + 4x^4 - 2x^2$

57. $x^2 - 2x - 24$

58. $3y(y - 3) - 4(y - 3)$

59. $x^2 - 5x + 4$

60. $2x^2 + 8x + 6$

Simplify.

61. $\sqrt{20}$

62. $\sqrt{98}$

63. $\sqrt{300}$

64. $\sqrt{54}$

65. $\sqrt{180}$

66. $\dfrac{\sqrt{12}}{4}$

67. $\dfrac{\sqrt{18}}{\sqrt{2}}$

68. $(5\sqrt{3})^2$

69. $(\sqrt{3} - 4)(\sqrt{3} + 2)$

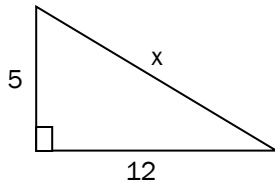70. $\sqrt{\dfrac{9}{5}}$

71. $4\sqrt{50} + \sqrt{32} - 6\sqrt{8}$

72. $\sqrt{a^5 b^{12}}$

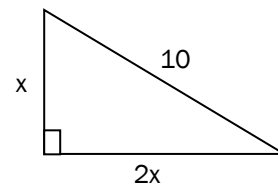73. Find the distance between the following points: (–5, –2) and (3, –1).

74. Find the midpoint of the following points: (6, -8) and (0, 4).

Find the value of _x_ in each right triangle.

75.

5

x

12

76.

10

x

2x

ADDITIONALLY,
MEMORIZE VALUES THROUGH 25^2 AND 5^3 _WITHOUT_ THE USE OF A CALCULATOR.

We look forward to seeing you in August!