Live Oak High School
Summer Math Skills Review
for students going into Integrated Math 2

Name:_____

Simplify each expression.

1. $-52 + 83 - 16$

2. $-32 + 27 - 68 + 12$

3. $-6 \cdot 8 \cdot 3$

4. $28 \cdot -3 + 6$

5. $8(3x - 4) - 6$

6. $-4(2x + 7) - (3x - 8)$

Solve.

7. $x + \frac{1}{2} = \frac{5}{6}$

8. $4 - (2 - 3x) = 6x - (4x + 3)$

9. $\frac{x}{6} = \frac{7}{32}$

10. $\frac{c-6}{7} = \frac{1}{c}$

11. $\frac{2w-3}{5} = \frac{w}{3}$

12. $\frac{p}{4} = \frac{10}{p-3}$

13. The sum of two angles is 180° and the angles have a ratio of 7:8. What is the number of degrees in the smaller angle?

14. After taking 3 math quizzes Elise has an average of 89. What must she score on the fourth quiz to raise her average to 91?

15. Point R(5,-3) and point N(9,-4) are on line *k*. What is the slope of the line passing through these points?

16. What is the slope of a horizontal line?

17. What is the slope of a vertical line?

18. How are the slopes of parallel lines related?

19. How are the slopes of perpendicular lines related?

Write the equation of a line that satisfies the following conditions.

20. slope = 9; *y*-intercept = 17

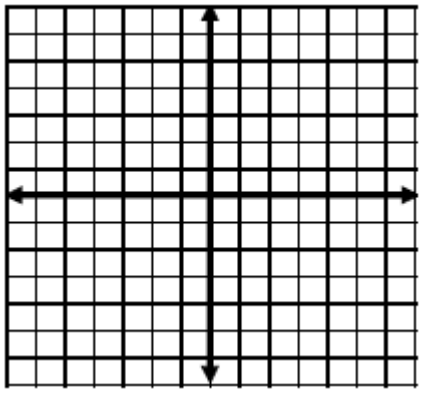
21. slope = $\frac{1}{3}$; passes through (–9, 4)

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

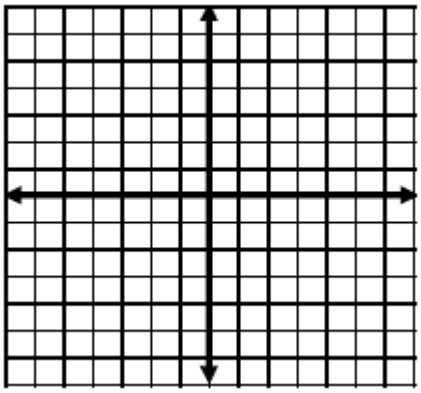
23. perpendicular to $y = 4x + 3$; passes through (8,5).

Graph each line or parabola on a coordinate plane.

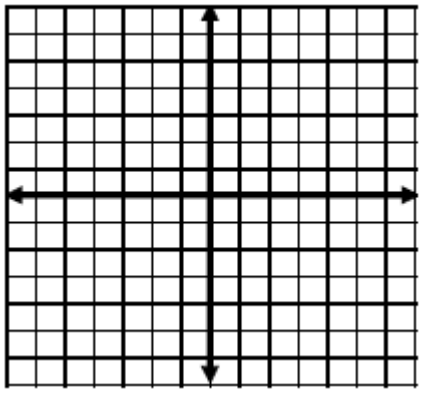
24. $y = 5x - 3$



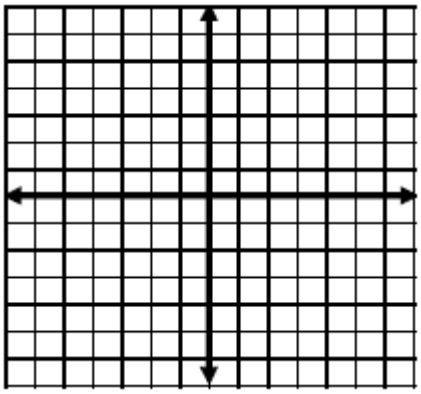
25. $y = -\frac{1}{4}x + 2$



26. $x = -6$



27. $y = x^2 - 3$



Solve each system of equations.

28. $4x + 3y = 13$
$x + y = 4$

29. $y = 1.5x + 4$
$0.5x + y = -2$

Simplify. Answers should have only positive exponents.

30. $(2y)^3$

31. $(2x^3)(3x^4)$

32. $\frac{ab^4}{-2b^3}$

33. $\frac{3x^{-2}}{x^{-1}}$

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

35. $\frac{-2x^3y^4}{-3xy^5}$

Find each product.

36. $5x^2(2x^2 - x)$

37. $4t(t^2 + 7)$

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

39. $(5x - 2)(3x - 4)$

40. $(2x^2 + 1)(x - 3)$

41. $(x + 8)^2$

Factor each expression.

42. $6x^2 + 8$

43. $8x^6 + 4x^4 - 2x^2$

44. $x^2 - 2x - 24$

45. $3y(y - 3) - 4(y - 3)$

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

47. $2x^2 + 8x + 6$

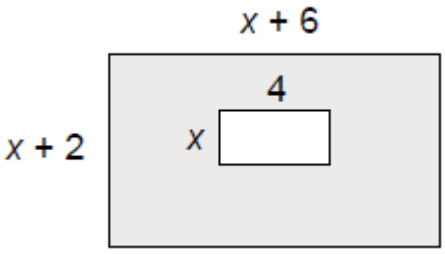
48. The midpoint of a diameter of a circle is M(3, 4). If one endpoint of a diameter is A(–3, 6), what are the coordinates of the other endpoint?

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

50. If the side of a cube is 5xy centimeters in length, what is the volume of the cube?

Use the diagram below for #51-54.

51. What is the area of the large rectangle?



52. What is the area of the small rectangle?

53. If the smaller region is removed, what is the area of the shaded region?

54. Factor the polynomial that represents the area of the shaded region.

Simplify.

55. $\sqrt{20}$

56. $\sqrt{98}$

57. $\sqrt{300}$

58. $\sqrt{54}$

59. $\sqrt{180}$

60. $\frac{\sqrt{12}}{4}$

61. $\frac{\sqrt{18}}{\sqrt{2}}$

62. $\left(5\sqrt{3}\right)^2$

63. $\left(\sqrt{3}-4\right)\left(\sqrt{3}+2\right)$

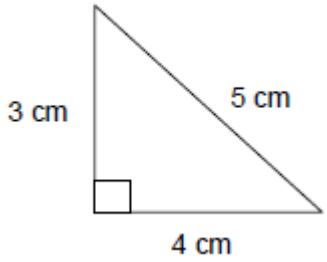
64. $\sqrt{\frac{9}{5}}$

65. $4\sqrt{50}+\sqrt{32}-6\sqrt{8}$

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

Find the perimeter and area of each figure. Include units!

67. Perimeter = _____
Area = _____



68. Perimeter = _____
Area = _____