

## Algebra 2

## Sheet #138: Review Ch. P and 1

Name \_\_\_\_\_

Per/Sec. \_\_\_\_\_

Review of Chapter Sections P.1, P.2, P.3, P.4, 1.2, 1.3.

Simplify.

1.  $3a(-a)$

2.  $5 \cdot m \cdot m \cdot 2 \cdot m \cdot m$

3.  $(y^3)^2$

4.  $(5x^3)^2$

5.  $(-10p^2)^3$

6.  $(7 + 2)(-3) + 9$

7.  $(5 + 2^2)^2$

8.  $|-11|$

9.  $-\left|\frac{-72}{24}\right|$

Rewrite each expression using the distributive property.

10.  $(m + 4)(-9)$

Write as an algebraic expression.

11. A number plus twenty-seven

12. Four times a number

13. The sum of 12 and five times a number

Evaluate for the given value(s).

14.  $-3n - 5$  for  $n = -6$

15.  $(-6x)^5$  for  $x = \frac{1}{3}$

16.  $w^3 + w^2 + w$  for  $w = -3$

17.  $-|4 - u|$  for  $u = 18$

18. Find the area of a square whose side is  $\frac{2}{3}x$ .

Simplify.

19.  $(x^3 - 7x^2 + 9x) + (4x^2 - x)$

20.  $(2r^2 - 6) - (5r^2 - 10)$

Multiply.

21.  $(w^2 - w)(w)$

22.  $(3d^3 + d^2)(6d)$

23.  $(x - 8)(x + 1)$

24.  $(3 - p)(2 - p)$

25.  $(x + 1)^2$

26.  $(12 - p)^2$

27.  $(3 + 4w^3)^2$

28.  $(m - 7)(m - 7)$

29.  $(x - 5)(x + 5)$

30.  $(a - 2)(a^2 + 3a - 8)$

31. The side of a square is  $7y - 1$ . What is the area?32. Find the area of a rectangle whose dimensions are  $3x + 5$  and  $2x - 1$ .

33. What is 75% of 16?

34. 20% of what number is 24?

35. What percent of 200 is 120?

36. An airplane has 18 first class, 52 business class, and 170 economy class seats. What percent of the seats are first class?

37. An airplane flies for  $2\frac{1}{3}$  hours at an average speed of 348 mph. How far does it go?

38. What is the average speed of a bicyclist who goes 54 miles in 3 hours?

39. How long (in minutes) does it take someone to run a 10 km race whose average speed is 15 km/hr?

Solve.

40.  $8 + 6x = 50$

41.  $21 = -6(5 - h)$

42.  $\frac{3}{8}(2p - 64) = -24$

43.  $5 + 11a = 11a - 6$

44.  $\frac{2}{3}(6x + 9) = \frac{1}{2}(10x - 2)$

45.  $-18$  is the sum of  $p$  and  $-65$ . Solve for  $p$ .

46. 81 more than a number is 100. Find the number.

47. 200 is 90 more than five times  $d$ . Find  $d$ .

48. The second of two numbers is 4 more than 7 times the first number. Their sum is 76. Find the two numbers.

49. Find three consecutive integers whose sum is 135.

50. Mr. Loren has 36 coins, all 50¢ pieces and quarters. How many of each does he have, if their total value is \$15.50?

51. Two boys on bicycles start from the same place at the same time. One rides at 15 km/hr, and the other at 9 km/hr. They travel in opposite directions. How much time will pass before they are 48 km apart?

52. How much water should be added to 75 mL of pure lemon juice in order to get a mixture that is 20% lemon juice?

53. The perimeter of a rectangle is 140 in. The length is 28 in. greater than the width. Find the width of the rectangle.
54. A square and an equilateral triangle have the same perimeter. Each side of the square is 27 cm. Find the length of each side of the triangle.
55. The reciprocal of a number is 2 more than the reciprocal of 5 times the number. Find the number.
56. Emily invested part of her \$6,000 at 7% annual interest and the rest at 9% annual interest. A year later, her interest income was \$510. How much did she invest in each account?
57. Paula leaves on a bicycle ride and pedals at an average speed of 12 mph. Two hours later, her brother gets in a car and drives after her at an average speed of 42 mph. How long until he catches up?
58. In 14 flight hours, a plane goes 900 miles with the wind and returns against the wind. If the plane's airspeed is 140 mph, find the velocity of the wind (assume it is constant).