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**SECTION 1.1: Write an algebraic expression for each verbal expression.**

- 1) the difference between 10 and  $u$
  - 2) 91 more than the square of a number
  - 3) the sum of 18 and a number
  - 4) three fourths the square of  $b$
  - 5) the product of 33 and  $f$
  - 6) two fifths the cube of a number
  - 7) 74 increased by 3 times  $y$
  - 8) 15 decreased by twice a number
- 9) A used bookstore sells paperback fiction books in excellent condition for \$2.50 and in fair condition for \$.50. Write an expression for the cost of buying  $x$  excellent condition paperbacks and  $f$  fair condition paperbacks.

**SECTION 1.2: Evaluate each expression if  $a = 12$ ,  $b = 9$ , and  $c = 4$ .**

- 10)  $a^2 + b - c^2$
- 11)  $b^2 + 2a - c^2$
- 12)  $2c(a + b)$
- 13)  $4a + 2b - c^2$
- 14)  $(a^2 + 4b) + c$
- 15)  $c^2 \cdot (2b - a)$
- 16)  $\frac{bc^2 + a}{c}$
- 17)  $\frac{2c^3 - ab}{4}$
- 18)  $2(a - b)^2 - 5c$
- 19)  $\frac{b^2 - 2c^2}{a + c - b}$

20) Ann Carlyle is planning a business trip for which she needs to rent a car. The car rental company charges \$36 per day plus \$.50 per mile over 100 miles. Suppose Ms. Carlyle rents the car for 5 days and drives 180 miles.

a) Write an expression for how much it will cost Ms. Carlyle to rent the car.

b) Evaluate your expression to determine how much Ms. Carlyle must pay the car rental company.

21) The length of a rectangle is  $3n + 2$  and its width is  $n - 1$ . The perimeter of the rectangle is twice the sum of its length and its width.

a) Write an expression that represents the perimeter of the rectangle.

b) Find the perimeter of the rectangle when  $n = 4$  inches. (Be sure to include the unit in your answer.)

**SECTION 1.4 : Use the Distributive Property to rewrite each expression.**

22)  $(9-p)3$

23)  $(5y-3)7$

24)  $15\left(f+\frac{1}{3}\right)$

25)  $16(3b-0.25)$

26)  $m(n+4)$

27)  $(c-4)d$

**Simplify each expression. If not possible, write "simplified".**

28)  $w + 14w - 6w$

29)  $3(5+6h)$

30)  $12b^2 + 9b^2$

31)  $25t^3 - 17t^3$

32)  $3a^2 + 6a + 2b^2$

33)  $4(6p+2q-2p)$

**Write an algebraic expression for each verbal expression. Then simplify.**34) 4 times the difference of  $f$  squared and  $g$ , increased by the sum of  $f$  squared and  $2g$ 35) 3 times the sum of  $x$  and  $y$  squared plus 5 times the difference of  $2x$  and  $y$ **SECTION 1.5: Solve each equation.**

36)  $a + \frac{1}{2} = 1$

37)  $4b - 8 = 6$

38)  $6a + 18 = 27$

39)  $7b - 8 = 16.5$

40)  $120 - 28a = 78$

41)  $\frac{28}{b} + 9 = 16$

42)  $x = 18.3 - 4.8$

43)  $w = 20.2 - 8.95$

44)  $\frac{37-9}{18-11} = d$

45)  $\frac{97-25}{41-23} = k$

46)  $y = \frac{4(22-4)}{3(6)+6}$

47)  $\frac{5(2^2)+4(3)}{4(2^3-4)} = p$