

# 1-2 Simplifying Expressions

Name: \_\_\_\_\_

Time> Start: \_\_\_\_\_ Finish: \_\_\_\_\_ Total Time = \_\_\_\_\_

Simplify the given expressions.

- \_\_\_\_\_ 1.  $3x + 4x^2 + 6x^3 + 2x + 7x^3 + 5x^2$
- \_\_\_\_\_ 2.  $5x + 3xy + 6y + 2x + 4y + 8xy$
- \_\_\_\_\_ 3.  $-2y^2 + 3x - 5y - (2x + 4y^2) - 8y$
- \_\_\_\_\_ 4.  $3xy + 5yx - 2x + 8x + 3xy$
- \_\_\_\_\_ 5.  $4ab^3 - 3ab^2 + 2ab - 5ab^2 + 2ab^3 - 5ab - 4ab^2$
- \_\_\_\_\_ 6.  $6ab^2 + 3a^2b - 4ab + 3a^2b - ab^2 + ab + 2a^2b$
- \_\_\_\_\_ 7.  $(2n)(4n) + (6n)(4n)$
- \_\_\_\_\_ 8.  $(n + 5)(n + 2)$
- \_\_\_\_\_ 9.  $(a - 4)(a + 4)$
- \_\_\_\_\_ 10.  $(2n - 1)(3n + 5)$
- \_\_\_\_\_ 11.  $(6n^2)(2n) + 10n^3$
- \_\_\_\_\_ 12.  $(3n^4)^2 + (2n^4)^2$
- \_\_\_\_\_ 13.  $(3x^5)(7x^9) + (2x^6)(3x^8)$
- \_\_\_\_\_ 14.  $(4x^3)^2(2x^4) - (5x^2)^4(2x)^3$
- \_\_\_\_\_ 15.  $(x^7)(4x^3)^4 + (x^6y^4)^2$
- \_\_\_\_\_ 16.  $3x(5x - 7) + 7(2x - 3)$
- \_\_\_\_\_ 17.  $3(3x + 8) + 2(7x - 12)$
- \_\_\_\_\_ 18.  $(5x^2 + 3x - 4) + (3x^3 - 18x + 5)$
- \_\_\_\_\_ 19.  $5(2x - 6) - 4(x - 3)$
- \_\_\_\_\_ 20.  $(3x + 2)(5x - 4) - (3x + 2)(5x + 4)$

\_\_\_\_\_ 21.  $(2x + 3)(2x^2 + 2x - 5)$

\_\_\_\_\_ 22.  $(x - 7)(2x - 3)(2x - 8)$

\_\_\_\_\_ 23.  $(x^2 + 5x - 2)(3x^2 - 5x + 2)$

### **SAT Questions**

\_\_\_\_\_ 24. Tina has a pitcher containing  $x$  ounces of root beer. If she pours  $y$  ounces of root beer into each of  $z$  glasses, how many ounces of root beer will remain in the pitcher?

- A.  $\frac{x}{y} + z$       B.  $xy - z$       C.  $\frac{x}{yz}$       D.  $x - yz$       E.  $\frac{x}{y} - z$

\_\_\_\_\_ 25. Starting with a blue light, a strand of colored lights contains lights in a repeating pattern of blue, orange, green, purple, red, and yellow. What is the color of the 53<sup>rd</sup> light?

- A. Blue      B. Orange      C. Green      D. Purple      E. Red

\_\_\_\_\_ 26. Triangle ABC has a perimeter of 10, and the lengths of its sides are all integers. If  $a$  is the length of side  $\overline{BC}$ , what is the difference between the largest and smallest possible values of  $a$ ?

- A. 1      B. 2      C. 3      D. 4      E. 7

\_\_\_\_\_ 27. What is the greatest number of regions into which an equilateral triangle can be divided using exactly three straight lines?

- A. 4      B. 6      C. 7      D. 8      E. 9

\_\_\_\_\_ 28. If  $3x = 12$ , then what is the value of  $\frac{8}{x}$ ?