

 Section 8.1 Exercises

Directions: Complete the following problems. You must show sufficient work in order to receive credit.

For problems 1 - 4, write the indicated quantity as an algebraic expression. Clearly define your variable.

- 1) *Leo is 2 years older than his brother.* Express Leo's age as an algebraic expression.
- 2) *Rachel drives twice as fast as her mother.* Express Rachel's speed as an algebraic expression.
- 3) *A bank account (b) is decreased by \$34..* Express the amount of money in the account as an algebraic expression.
- 4) *A pizza is split up evenly between 8 people..* Express the amount of pizza each person receives as an algebraic expression.

For problems 5 - 9, evaluate the expression for the given values of the variables.

- 5) $5x - 4y$ for $x = -2$ and $y = 7$
- 6) $-4a$ for $a = -6$
- 7) $b^2 + 7$ for $b = -4$
- 8) $5(x - y)$ for $x = 3$ and $y = -2$
- 9) $-2a^2$ for $a = -5$

For problems 10 - 14, write an equivalent expression using the Commutative Property of Real Numbers.

- 10) $x + 5$
- 11) $-9 + b$
- 12) ab
- 13) $x(3)$
- 14) $10 - c$

For problems 15 - 19, write an equivalent expression using the Associative Property of Real Numbers.

- 15) $-4 + (x + 3)$
- 16) $5(6x)$
- 17) $(x - 2) + 7$
- 18) $a(bc)$
- 19) $3 + (x + y)$

For problems 20 - 24, write an equivalent expression using the Distributive Property of Real Numbers.

- 20) $-4(x + 3)$
- 21) $8(a - 3b + c)$
- 22) $-6(-x + 2y)$
- 23) $-(2x - 4)$
- 24) $\frac{1}{2}(8x - 10y - 4)$

Mixed Exercises.

- 25) Evaluate $-3x^2$ for $x = 2$.
- 26) Evaluate $5a + 4$ for $a = -7$
- 27) Evaluate $8c - 4d$ for $c = -1$ and $d = 9$.
- 28) Clear the parentheses for $-2(x + 3)$
- 29) Rewrite $6 + (a + 7)$ using the Associative Property of Real Numbers.