

## Chapter 1.2 Review

### Short Answer

1. A tennis racket costs \$20 and a tennis ball costs \$2. Susan bought a tennis racket and some tennis balls. Write an expression for the total amount Susan spent. Choose  $n$  as the variable for the number of balls.
2. Alina bought several pens for \$5 each and a notebook for \$10. If she bought  $n$  pens, write an expression for the total amount Alina spent.
3. The ski club bought 15 lift tickets and received a \$5 discount on the total price. If  $p$  is the price of a ticket, write an expression to represent the total cost for the tickets.
4. A video store charges \$3 to rent a movie and \$2 for everyday if it is overdue. Write an expression that represents the total cost of renting a video and returning it  $d$  days overdue.
5. Allen received \$50 for his birthday. Each week, he spent \$5 of the money to go ice skating. Write an expression to represent the money in dollars left with Allen after  $x$  weeks.
6. In the problem below, decide whether the expression  $10c + 13$  can represent the answer to the question. If it can, explain what  $c$  stands for in that situation.  
John bought several cassettes for \$10 each and a CD for \$13. How much did he spend altogether?
7. In the problem below, decide whether the expression  $7c$  can represent the answer to the question. If it can, explain what  $c$  stands for in that situation.  
The members of a music club are raising money by selling CDs. Each CD costs the club \$3. Write an expression to represent how much profit the club will make by selling the CDs for \$10 each.
8. In the problem below, decide whether the expression  $4d + 7$  can represent the answer to the question. If it can, explain what  $d$  stands for in that situation.  
Sam made two round trips to the school and then traveled another 7 yards to the library. Write an expression to represent the total distance Sam traveled.
9. In the problem below, decide whether the expression  $7p - 4$  can represent the answer to the question. If it can, explain what  $p$  stands for in that situation.  
What is the total cost for having 7 pizzas delivered if the delivery fee is \$4?
10. In the problem below, decide whether the expression  $8a + 2$  can represent the answer to the question. If it can, explain what  $a$  stands for in that situation.  
Mark's brother Joe is 8 more than twice his age. Find Joe's age.

11. The relationship between distance,  $d$ , speed,  $s$ , and time,  $t$ , is given by the formula  $d = s \times t$ . Donald takes 15 minutes to reach his school by walking from his house. His average speed is 2,000 meters per hour. What is the distance between Donald's school and house in meters?
12. The relationship between Greenwich Mean Time (GMT) and Australian Eastern Standard Time (AEST) is given by the formula  $AEST = GMT + 10$ . Ronald booked a ticket in a flight that reaches Sydney airport at 6 A.M. GMT. Find the AEST by which Ronald's flight reaches Sydney.
13. The formula for the volume of a cylinder is  $V = \pi r^2 l$ , where  $r$  is the radius of the cylinder and  $l$  is the height. What is the maximum quantity of a cylindrical tea cup that has an inner radius of 3 centimeters and a height of 10 centimeters? [Hint: The maximum quantity of the tea cup is equal to the inside volume of the tea cup.]
14. Simple interest is calculated using the formula  $I = prt$ , where  $p$  represents the principal in dollars,  $r$  represents the annual interest rate, and  $t$  represents the time in years. Find the simple interest  $I$  given  $p = \$1800$ ,  $r = 6\%$ , and  $t = 4$  years.
15. The relationship between temperature in degrees Celsius and degrees Fahrenheit is given by the formula  $F = \frac{9}{5}C + 32$ , where  $F$  is the temperature in degrees Fahrenheit and  $C$  is the temperature in degrees Celsius. Convert  $107^\circ$  F to degrees in Celsius.

## Chapter 1.2 Review Answer Section

### SHORT ANSWER

1. ANS:

$$20 + 2n$$

The expression for the total amount is obtained by adding the cost of the tennis racket and the cost of  $n$  balls.

DIF: Average REF: Page 34

OBJ: 1-2.1 To practice using variables to write expressions.

TOP: To practice using variables to write expressions.

KEY: Variables, Write Expressions

NOT: /a/ Correct! /b/ Does Susan buy only one ball? /c/ How many tennis rackets did Susan buy? /d/ What is the cost of each ball?

2. ANS:

$$5n + 10$$

Use an algebraic expression to represent information you know and information you want to find.

DIF: Basic REF: Page 34

OBJ: 1-2.1 To practice using variables to write expressions.

TOP: To practice using variables to write expressions.

KEY: Variables, Write Expressions

NOT: /a/ How many pens are there? /b/ What is the cost of each pen? /c/ The number of pens is to be multiplied with the cost of each pen and not added. /d/ Correct!

3. ANS:

$$15p - 5$$

Use an algebraic expression to represent information you know and information you want to find.

DIF: Basic REF: Page 34

OBJ: 1-2.1 To practice using variables to write expressions.

TOP: To practice using variables to write expressions.

KEY: Variables, Write Expressions

NOT: /a/ Is the discount amount to be added or subtracted? /b/ Did you calculate the price of 15 tickets correctly? /c/ Correct! /d/ Did you multiply the number of tickets with the ticket price?

4. ANS:

$$3 + 2d$$

Use an algebraic expression to represent information you know and information you want to find.

DIF: Basic REF: Page 34

OBJ: 1-2.1 To practice using variables to write expressions.

TOP: To practice using variables to write expressions.

KEY: Variables, Write Expressions

NOT: /a/ Did you interchange the cost of renting a movie and the cost of overdue? /b/ Correct! /c/ What is the overdue charge for each day? /d/ Did you calculate the cost correctly?

5. ANS:

$$50 - 5x$$

Use an algebraic expression to represent information you know and information you want to find.

DIF: Basic REF: Page 34

OBJ: 1-2.1 To practice using variables to write expressions.

TOP: To practice using variables to write expressions.

KEY: Variables, Write Expressions

NOT: /a/ Correct! /b/ Check the sign of the numbers in the expression. /c/ Calculate the amount Allen spends on ice skating in the given number of weeks. /d/ How much does Allen spend each week?

6. ANS:

Yes;  $c$  stands for the number of cassettes.

Use an algebraic expression to represent information you know and information you want to find.

DIF: Average REF: Page 35 OBJ: 1-2.2 To use expressions to solve problems.

TOP: To use expressions to solve problems.

KEY: Solve Problems, Expressions

NOT: /a/ John bought only one CD. /b/ Correct! /c/ Did you use the order of operations? /d/ Did you interchange the price of CDs and the price of cassettes?

7. ANS:

Yes;  $c$  stands for the number of CDs sold.

Use an algebraic expression to represent information you know and information you want to find.

DIF: Average REF: Page 35 OBJ: 1-2.2 To use expressions to solve problems.

TOP: To use expressions to solve problems.

KEY: Solve Problems, Expressions

NOT: /a/ Correct! /b/ The cost of each CD is \$3. /c/ Did you calculate the profit earned on each CD? /d/ The profit earned on each CD is \$7.

8. ANS:

Yes;  $d$  is the distance to the school.

Use an algebraic expression to represent information you know and information you want to find.

DIF: Average REF: Page 35 OBJ: 1-2.2 To use expressions to solve problems.

TOP: To use expressions to solve problems.

KEY: Solve Problems, Expressions

NOT: /a/ Did you add the distance traveled to the library? /b/ The distance to the library is 7 yards. /c/ Correct! /d/ Sam made two round trips to the school and not one.

9. ANS:

No;  $7p + 4$  represents the above situation.

Use an algebraic expression to represent information you know and information you want to find.

DIF: Average REF: Page 35 OBJ: 1-2.2 To use expressions to solve problems.

TOP: To use expressions to solve problems.

KEY: Solve Problems, Expressions

NOT: /a/ Did you add the delivery fee? /b/ Add the delivery fee. /c/ Did you interchange the number of pizzas and the delivery fee? /d/ Correct!

10. ANS:

No;  $2a + 8$  represents the above situation.

Use an algebraic expression to represent information you know and information you want to find.

DIF: Average REF: Page 35 OBJ: 1-2.2 To use expressions to solve problems.

TOP: To use expressions to solve problems.

KEY: Solve Problems, Expressions

NOT: /a/ Did you use the variable correctly? /b/ Joe's age is 8 more than twice the Mark's age. /c/ Did you find the correct expression for Joe's age? /d/ Correct!

11. ANS:

500 m

Substitute the values of time and speed in the formula  $d = s \times t$ .

DIF: Advanced REF: Page 38

OBJ: 1-2.3 To develop and use formulas to find specific quantities.

TOP: To develop and use formulas to find specific quantities.

KEY: Formulas, Solve Problems

NOT: /a/ Did you convert time into hours correctly? /b/ Correct! /c/ Check the time used for calculating the distance covered. /d/ Did you substitute the correct value of speed in the formula?

12. ANS:

4 P.M.

Add 10 hours to GMT.

DIF: Basic REF: Page 39

OBJ: 1-2.3 To develop and use formulas to find specific quantities.

TOP: To develop and use formulas to find specific quantities.

KEY: Formulas, Solve Problems

NOT: /a/ Correct! /b/ Did you add the correct number of hours? /c/ Did you add correctly? /d/ What is the formula that relates AEST and GMT?

13. ANS:

$90\pi \text{ cm}^3$

The maximum quantity of the tea cup is obtained by substituting  $r$  and  $l$  in the formula  $V = \pi r^2 l$ .

DIF: Average REF: Page 39

OBJ: 1-2.3 To develop and use formulas to find specific quantities.

TOP: To develop and use formulas to find specific quantities.

KEY: Formulas, Solve Problems

NOT: /a/ Did you square the radius?. /b/ What is the square of 3? /c/ Correct! /d/ Did you substitute correctly?

14. ANS:

\$432

Simple interest is obtained by substituting the values of principal, annual interest rate, and time in years in the formula  $I = prt$ .

DIF: Advanced REF: Page 38

OBJ: 1-2.3 To develop and use formulas to find specific quantities.

TOP: To develop and use formulas to find specific quantities.

KEY: Formulas, Solve Problems

NOT: /a/ Did you use the correct interest rate in the calculation? /b/ Correct! /c/ Did you substitute the correct values in the formula? /d/ Substitute each value given into the formula. Then, evaluate the expression using the order of operations.

15. ANS:

$41.65^\circ\text{C}$

Substitute the value of  $F$  in the formula  $C = \frac{5}{9}(F - 32)$ .

DIF: Advanced REF: Page 39

OBJ: 1-2.3 To develop and use formulas to find specific quantities.

TOP: To develop and use formulas to find specific quantities.

KEY: Formulas, Solve Problems

NOT: /a/ Did you use the correct formula to calculate the answer? /b/ Correct! /c/ Did you substitute correctly in the formula? /d/ Did you add 32?