

**1-6****Practice: Skills****Algebra: Variables and Expressions**

Complete the table.

Algebraic Expressions	Variables	Numbers	Operations
1. $5d + 2c$	?	?	?
2. $5w - 4y + 2s$	?	?	?
3. $xy \div 4 + 3m - 6$	?	?	?

Evaluate each expression if  $a = 3$  and  $b = 4$ .

4.  $10 + b$

5.  $2a + 8$

6.  $4b - 5a$

7.  $a \times b$

8.  $7a \times 9b$

9.  $8a - 9$

10.  $b \times 22$

11.  $a^2 + 1$

12.  $18 \div 2a$

13.  $a^2 \times b^2$

14.  $ab \div 3$

15.  $15a - 4b$

16.  $ab + 7 \times 11$

17.  $36 \div 6a$

18.  $7a + 8b \times 2$

Evaluate each expression if  $x = 7$ ,  $y = 15$ , and  $z = 8$ .

19.  $x + y + z$

20.  $x + 2z$

21.  $xz + 3y$

22.  $4x - 3z$

23.  $z^2 \div 4$

24.  $6z - 5z$

25.  $9y \div (2x + 1)$

26.  $15y + x^2$

27.  $y^2 + 4 \times 6$

28.  $y^2 - 2x^2$

29.  $x^2 + 30 - 18$

30.  $13y - zx \div 4$

31.  $xz - 2y + 8$

32.  $z^2 + 5y - 20$

33.  $3y \times 40x - 1,000$

**Practice: Word Problems****Algebra: Variables and Expressions**

**TRAVEL** For Exercises 1 and 2, use the table that shows the distance between cities in Arizona.

Arizona Mileage Chart

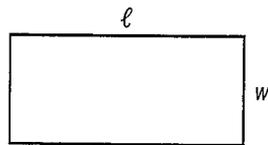
	Flagstaff	Phoenix	Tucson	Nogales
Phoenix	136 miles		117 miles	181 miles
Tucson	253 miles	117 miles		64 miles
Nogales	317 miles	181 miles	64 miles	

1. To find the speed of a car, use the expression  $d \div t$  where  $d$  represents the distance and  $t$  represents time. Find the speed of a car that travels from Phoenix to Flagstaff in 2 hours.

2. To find the time it will take for a bicyclist to travel from Nogales to Tucson, use the expression  $d/s$  where  $d$  represents distance and  $s$  represents speed. Find the time if the bicyclist travels at a speed of 16 miles per hour.

3. **PERIMETER** The perimeter of a rectangle can be found using the formula  $2\ell + 2w$ ,

where  $\ell$  represents the length and  $w$  represents the width. Find the perimeter if  $\ell = 6$  units and  $w = 3$  units.



4. **PERIMETER** Another formula for perimeter is  $2(\ell + w)$ . Find the perimeter of the rectangle in Exercise 3 using this formula. How do the answers compare? Explain how you used order of operations using this formula.

5. **SHOPPING** Write an expression using a variable that shows how much 3 pairs of jeans will cost if you do not know the price of the jeans. Assume each pair costs the same amount.

6. **SHOPPING** Write an expression using variables to show how much 3 plain T-shirts and 2 printed T-shirts will cost, assuming that the prices of plain and printed T-shirts are not the same.