

Practice Assignment

0 25 50 75 100

1. Write each phrase as an algebraic expression:

a. Fourteen decreased by a number p .

$$14 - p$$

b. Five more than twice a number.

$$2x + 5$$

c. 14 less than m .

$$m - 14$$

d. 18 more than y .

$$y + 18$$

e. The quotient of a number and 9

$$\frac{x}{9}$$

f. The product of 5 and y added to 3

$$5y + 3$$

g. 4 times a number cubed decreased by 7

$$4x^3 - 7$$

h. 3 more than four times a number

$$4x + 3$$

2. For each word problem, show the work to how you arrived at your answer for parts A and B. Define the quantity that is changing each time in part C. Using your work, create an algebraic expression for part D.

a. You buy 100 yo-yos to give away as prizes at a carnival.

a. If 12 people win a prize, how many yo-yos will you have left?

$$100 - 12 = 88 \text{ yo-yos}$$

b. How many yo-yos will you have if 34 people win a prize?

$$100 - 34 = 66 \text{ yo-yos}$$

c. What quantity is changing each time? What variable will you use to represent this quantity?

x : number of yo-yo's

d. Write an expression to represent the scenario.

$$100 - x$$

b. Bulk trail mix costs \$1.95 per pound.

a. If you purchase 4 pounds of trail mix, how much will that cost?

$$1.95 \cdot 4 = \$7.80$$

b. If you purchase 7 pounds of trail mix, how much will that cost?

$$1.95 \cdot 7 = \$13.65$$

c. What quantity is changing each time? What variable will you use to represent this quantity?

x : number of pounds

d. Write an expression to represent the scenario.

$$1.95x$$

c. The charge for ice skating is \$3 for the skate rental and \$2 per hour to skate.

a. How much will you pay for 4 hours of skating?

$$2(4) + 3 = \$11$$

b. How much will you pay for 5½ hours of skating?

$$2(5.5) + 3 = \$14$$

c. What quantity is changing each time? What variable will you use to represent this quantity?

x : number of hours

d. Write an expression to represent the scenario.

$$2x + 3$$

d. You have \$15 to spend at the snack bar. All of the snacks at the snack bar cost \$1.50 each.

a. How much money will you have left if you buy 3 snacks?

$$15 - 1.50(3) = \$10.50$$

b. How much money will you have left if you buy 6 snacks?

$$15 - 1.50(6) = \$6.00$$

c. What quantity is changing each time? What variable will you use to represent this quantity?

x : number of snacks

d. Write an expression to represent the scenario.

$$15 - 1.50x$$

e. Atlanta City Cab charges \$3.30 as an initial fee the minute the customer enters the cab. The company then charges \$2.40 per mile.

a. How much will it cost to ride if the cab travels 10 miles?

$$3.30 + 2.40(10) = \$27.30$$

b. How much will it cost to ride if the cab travels 13.5 miles?

$$3.30 + 2.40(13.5) = \$35.70$$

c. What quantity is changing each time? What variable will you use to represent this quantity?

x : number of miles

d. Write an expression to represent the scenario.

$$3.30 + 2.40x$$

f. Caitlin has \$200 in her savings account. She withdraws \$15 each week.

a. How much will she have remaining after 5 weeks?

$$200 - 15(5) = \$125$$

b. How much will she have remaining after 9 weeks?

$$200 - 15(9) = 65$$

c. What quantity is changing each time? What variable will you use to represent this quantity?

x : number of weeks

d. Write an expression to represent the scenario.

$$200 - 15x$$

3. Simplify:

a. $7(2 - 3x) - 5(6 + x) + 4x$

$$\underline{14} - \underline{21x} - \underline{30} - \underline{5x} + \underline{4x}$$

$$\boxed{-16 - 22x}$$

b. $-4(-2x + 5) + 2(\frac{1}{2}x + 2)$

$$\underline{8x} - \underline{20} + \underline{x} + \underline{4}$$

$$\boxed{9x - 16}$$

c. $-6(-4x + 8) + 10 + 3(-5x + 7)$

$$\underline{24x} - \underline{48} + \underline{10} - \underline{15x} + \underline{21}$$

$$\boxed{9x - 17}$$

d. $8 - 4(-x - 11) - 5(x + 9) + 13x$

$$\underline{8} + \underline{4x} + \underline{44} - \underline{5x} - \underline{45} + \underline{13x}$$

$$\boxed{12x + 7}$$

4. Evaluate:

a. $\frac{-7d+14}{2}$ when $d = -4$

$$= \frac{-7(-4) + 14}{2}$$

$$= \frac{28 + 14}{2}$$

$$= \frac{42}{2}$$

$$= 21$$

b. $32.68 - 4.15q$ when $q = 10$

$$= 32.68 - 4.15(10)$$

$$= -8.82$$