

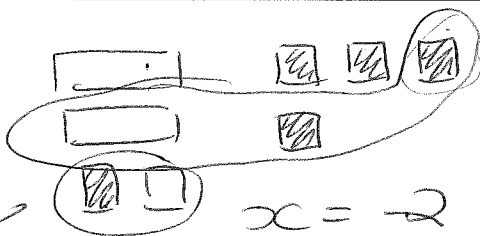
# Unit Review

## LESSON

- 6.1 1. Write the equation represented by the model. Then solve the equation using the model, showing your steps.

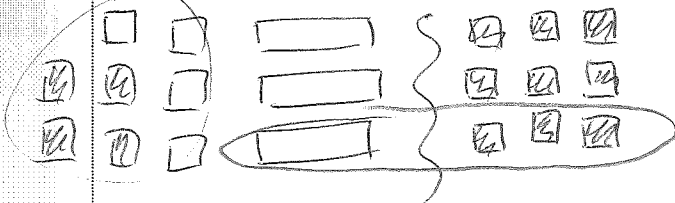


$$2x + 1 = -3$$



$$x = -2$$

2. Use a model to solve  $4 + 3c = -5$ .



$$c = -3$$

- 6.2 3. Solve each equation algebraically and verify the result.

a)  $4y - 7 = 13$   
 $\quad +7 \quad +7$

$$\frac{4y}{4} = \frac{20}{4}$$

$$y = 5$$

$$4(5) - 7 = 13$$

$$20 - 7 = 13$$

$$13 = 13$$

b)  $-9 = 5 + 2m$

$$\begin{array}{r} -9 = 5 + 2m \\ -5 \quad -5 \\ \hline -14 = +2m \\ \frac{-14}{2} = \frac{+2m}{2} \end{array}$$

$$-7 = m$$

LESSON

4. Maria solved the equation  $4 - 2p = 6$  using the steps below. Did Maria make an error?

YES/NO

If Maria made an error, correct it.

$$4 - 2p = 6$$

$$4 - 4 - 2p = 6 - 4$$

$$-2p = 2$$

$$\frac{-2p}{-2} = \frac{2}{-2}$$

$$p = 1 \quad p = -1$$

5. Rajinder collects hockey cards. He currently has 75. He has a plan to collect 12 more each week. After how many weeks will he have a total of 147?

- a) Write an equation that you can use to solve this problem.

Let  $w$  represent the number of weeks.

$$75 + 12w = 147$$

- b) Solve the equation.

$$\begin{array}{r} 75 + 12w = 147 \\ -75 \quad \quad \quad -75 \\ \hline 12w = 72 \end{array}$$

$$\frac{12w}{12} = \frac{72}{12}$$

$$w = 6$$

verify:

$$\begin{array}{l} 75 + 12(6) = 147 \\ 75 + 72 = 147 \\ 147 = 147 \end{array}$$

- c) Verify your result and write a concluding statement.

After 6 weeks he will have 147 cards.

- 6.3 6. Solve each of the following equations and verify the results.

a)  $\frac{t}{2} = 4$

$$\begin{array}{l} 2 \times \frac{t}{2} = 4 \times 2 \\ \frac{2}{2} \\ t = 8 \end{array}$$

b)  $\frac{w}{3} + 4 = -2$

$$\begin{array}{l} -4 = -4 \\ 3 \times \frac{w}{3} = -6 \times 3 \\ \frac{3}{3} \end{array}$$

$$w = -18$$

c)  $6 = 3 + \frac{x}{5}$

$$\begin{array}{l} -3 = -3 \\ 5 \times 3 = \frac{x}{5} \times 5 \\ \frac{5}{5} \\ 15 = x \end{array}$$

- 6.4 7. Expand using the distributive property.

a)  $6(v - 3)$

$$6v - 18$$

b)  $-9(3 + p)$

$$-27 - 9p$$

c)  $-1(-2 + w)$

$$2 - 1w$$

**LESSON**

8. Match each expression in Column 1 with an equivalent expression in Column 2.

**Column 1**

- a)  $3(t-4)$  iv
- b)  $-3(t+4)$  ii
- c)  $3(t+4)$  i
- d)  $-3(t-4)$  iii

**Column 2**

- i)  $3t+12$
- ii)  $-3t-12$
- iii)  $-3t+12$
- iv)  $3t-12$

6.5 9. Solve each equation and verify the results.

a)  $5(a-3) = 20$

$$\begin{aligned} 5a - 15 &= 20 \\ +15 &+15 \\ \hline 5a &= 35 \\ \frac{5a}{5} &= \frac{35}{5} \\ a &= 7 \end{aligned}$$

b)  $-2(n+3) = -10$

$$\begin{aligned} -2n - 6 &= -10 \\ +6 &+6 \\ \hline -2n &= -4 \\ \frac{-2n}{-2} &= \frac{-4}{-2} \\ n &= 2 \end{aligned}$$

**HINT**

Use the distributive property first.



c)  $7 = 4(2+y)$

$$\begin{aligned} 7 &= 8 + 4y \\ -8 &-8 \\ \hline -1 &= 4y \\ \frac{-1}{4} &= \frac{4y}{4} \\ -\frac{1}{4} &= y \end{aligned}$$

d)  $-2(x+3) = -6$

$$\begin{aligned} -2x - 6 &= -6 \\ +6 &+6 \\ \hline -2x &= 0 \\ \frac{-2x}{-2} &= \frac{0}{-2} \\ x &= 0 \end{aligned}$$

6.6 10. Complete the table of values for each relation.

a)  $y = x - 4$

x	-2	-1	0	1	2
y	-6	-5	-4	-3	-2

b)  $y = -2x + 5$

x	-2	-1	0	1	2
y	9	7	5	3	1

$$\begin{aligned} y &= -2(-2) + 5 \\ &= 4 + 5 \\ &= 9 \\ y &= -2(-1) + 5 \\ &= 2 + 5 \\ &= 7 \end{aligned}$$

$$\begin{aligned} y &= -2 - 4 \\ &= -6 \\ y &= -1 - 4 \\ &= -5 \end{aligned}$$

11. The equation of a linear relation is  $y = 4x - 3$ . Find the missing number in each ordered pair.

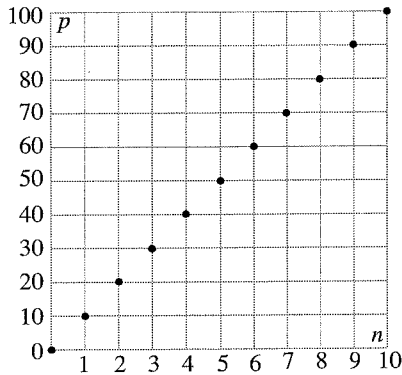
a)  $(x, y)$   
 a)  $(2, 5)$   
 $y = 4(2) - 3$   
 $= 8 - 3$   
 $= 5$

b)  $(x, y)$   
 b)  $(-2, -11)$   
 $-11 = 4x - 3$   
 $+3 \quad +3$   
 $-8 = 4x$   
 $\frac{-8}{4} = \frac{4x}{4}$   
 $-2 = x$

c)  $(x, y)$   
 c)  $(4, 13)$   
 $13 = 4x - 3$   
 $+3 \quad +3$   
 $16 = 4x$   
 $\frac{16}{4} = \frac{4x}{4}$   
 $4 = x$

LESSON

- 6.7 12. The graph below represents the relation of the percent score,  $p$ , on a math test and the number of questions,  $n$ , correct out of 10. The equation for the relation is  $p = 10n$ .



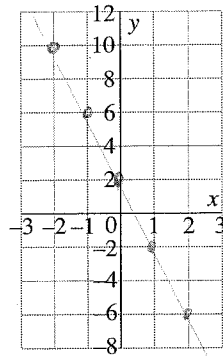
- a) State the ordered pair that represents the highest score.  $(x, y)$   
(10, 100)

- b) Describe the relationship between the variables on the graph.

As the numbers of questions correct increases by 1, the percent increases by 10.

13. a) Draw a graph of the relation represented by the table of values.

$x$	$y$
-2	10
-1	6
0	2
1	-2
2	-6



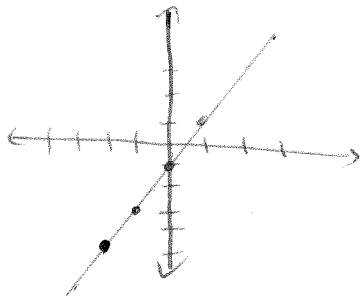
- b) Describe how you know that this is a linear relation.

A straight line can be drawn through the points.

14. On grid paper, draw the graph of each relation for integer  $x$  values from -2 to 2.

a)  $y = 2x - 1$

$x$	-2	-1	0	1
$y$	-5	-3	-1	1



b)  $y = 10 - x$

$x$	-2	0	2	4
$y$	12	10	8	6

