

# Target E-1 Extra Practice 1

1. Solve by inspection.

a)  $7n = -28$

b)  $10 = \frac{r}{-2}$

c)  $\frac{y}{6} = 9$

d)  $15 = -5c$

2. Draw a diagram to model each equation. Then, solve.

a)  $2x = 6$

b)  $\frac{x}{-4} = -2$

c)  $\frac{x}{3} = -4$

d)  $-5x = -5$

3. Use the opposite operation to solve each equation. Check your answer.

a)  $64 = 8d$

b)  $-44 = \frac{p}{-4}$

c)  $\frac{e}{7} = -16$

d)  $-6y = -72$

4. Show whether  $x = -15$  is the solution to each equation.

a)  $7x = -105$

b)  $1 = \frac{x}{-15}$

c)  $\frac{x}{-3} = -5$

d)  $-90 = -6x$

5. The length of a skateboard is about 4 times its width. The length of Mika's skateboard is 79 cm.

a) Write an equation to model this situation. \_\_\_\_\_

b) What is the width of Mika's skateboard? Check your answer.

### Extra Practice Answers

1. a)  $n = -4$  b)  $r = -20$  c)  $y = 54$  d)  $c = -3$

2. a)  $x = 3$  b)  $x = 8$  c)  $x = -12$  d)  $x = 1$

3. a)  $d = 8$  b)  $p = 176$  c)  $e = -112$  d)  $y = 12$

4. a) yes b) yes c) no d) no

5. a)  $4w = 79$ , where  $w$  is the width of the skateboard

b)  $4w = 79$

$w = 19.75$

Mika's skateboard has a length of 19.75 cm.

Check:  $4(19.75) = 79$

## Target E-1 Extra Practice 2

1. Draw balance scales and blocks to represent each equation. Solve.

a)  $2x + 5 = 9$

b)  $11 = 3x + 2$

c)  $4x + 1 = 5$

d)  $x + 7 = 10$

2. Draw algebra tiles to model each equation. Solve.

a)  $3x - 2 = 7$

b)  $-2x + 3 = -5$

c)  $4x + 1 = -3$

d)  $12 = 5x + 2$

3. Solve each equation. Check your answer.

a)  $23 = 5t + 3$

b)  $-2f - 3 = 11$

c)  $3w + 20 = -7$

d)  $-10 = 2q - 12$

4. Show whether  $x = 6$  is the solution to each equation.

a)  $4x + 10 = 34$

b)  $-15 = 3 - 3x$

c)  $-10 + 3x = 28$

d)  $-5x - 12 = -42$

5. In a recent football game, the Spartans scored 47 points. This total included four field goals, worth three points each. The rest were converted touchdowns, worth seven points each. Write and solve an equation to find out how many converted touchdowns the Spartans scored.

### Extra Practice Answers

1. a)  $x = 2$  b)  $x = 3$  c)  $x = 1$  d)  $x = 3$

2. a)  $x = 3$  b)  $x = 4$  c)  $x = -1$  d)  $x = 2$

3. a)  $t = 4$  b)  $f = -7$  c)  $w = -9$  d)  $q = 1$

4. a) yes b) yes c) no d) yes

5.  $7c + 12 = 47$ , where  $c$  represents converted touchdowns

$$7c = 35$$

$$c = 5$$

The Spartans scored five converted touchdowns.

## Target E-1 Extra Practice 3

1. Draw a model of each equation. Then, solve the equation.

a)  $5 + \frac{r}{-2} = 1$

b)  $7 = \frac{q}{3} - 2$

c)  $\frac{v}{4} - 6 = 4$

d)  $-1 = 4 + \frac{z}{5}$

2. Solve each equation. Check your answer.

a)  $-3 = \frac{n}{7} - 7$

b)  $2 + \frac{a}{-8} = 4$

c)  $-4 + \frac{x}{11} = -1$

d)  $5 = \frac{e}{-6} + 10$

3. Show whether  $x = -12$  is the solution to each equation.

a)  $\frac{x}{-3} + 6 = 2$

b)  $8 + \frac{x}{12} = 7$

c)  $0 = \frac{x}{4} - 3$

d)  $-10 = \frac{x}{-6} - 12$

4. Half of Xien's age added to 2 equals the age of her sister, Airah, who is 11. How old is Xien?

5. Alex is working on the equation  $4x - 5 = 7$ . The first thing he does is divide the whole equation by 4. He writes  $\frac{4x}{4} - \frac{5}{4} = \frac{7}{4}$ . He thinks he may have done something wrong. Has he? Justify your answer.

### Extra Practice Answers

1. **a)**  $r = 8$    **b)**  $q = 27$    **c)**  $v = 40$    **d)**  $z = -25$

2. **a)**  $n = 28$    **b)**  $a = -16$    **c)**  $x = 33$    **d)**  $e = 30$

3. **a)** no   **b)** yes   **c)** no   **d)** yes

4.  $\frac{x}{2} + 2 = 11$ , where  $x$  is Xien's age

$$\frac{x}{2} = 9$$

$$x = 18$$

Xien is 18 years old.

5. Instead of dividing by 4, Alex should have added 5 to both sides of the equation and then divided by 4.

## Target E-1 Extra Practice 4

1. Model each equation with algebra tiles. Then, solve. Check your solutions.

a)  $4(d - 3) = -8$

b)  $-6 = -3(k - 4)$

c)  $-5(p + 5) = -20$

d)  $14 = 2(s + 5)$

2. Solve each equation. Verify your answers.

a)  $42 = 7(y + 4)$

b)  $-4(c - 10) = 40$

c)  $-1(r + 8) = 0$

d)  $-18 = 6(j - 5)$

3. Show whether  $x = 4$  is the solution to each equation.

a)  $2(x + 7) = 22$

b)  $-15 = -3(x - 9)$

c)  $24 = 8(x - 1)$

d)  $-5(x + 2) = -30$

4. If you take the number of points the Panthers football team scored in their first game, add the 21 points they scored in their second game, and double the total, you will get 62 total points. How many points did they score in their first game?

5. During a school fundraiser, Room 19 raised triple the amount of money that Rooms 16 and 17 raised together. Room 19 brought in \$1095. Room 16 brought in \$165. What was the total amount of money raised by Room 17?

### Extra Practice Answers

1. a)  $d = 1$  b)  $k = 6$  c)  $p = -1$  d)  $s = 2$

2. a)  $y = 2$  b)  $c = 0$  c)  $r = -8$  d)  $j = 2$

3. a) yes b) no c) yes d) yes

4.  $2(p + 21) = 62$ , where  $p$  is the number of points scored in the first game

$$p + 21 = 31$$

$$p = 10$$

The Panthers scored 10 points in the first game.

5.  $3(m + 165) = 1095$ , where  $m$  is the amount of money raised by Room 17

$$m + 165 = 365$$

$$m = 200$$

Room 17 raised \$200.



**Lesson 6.1: Solving Equations Using Models**

1. Use a model to solve each equation.  
Verify the solution.
  - a)  $7x = 56$
  - b)  $45 = 9x$
  - c)  $-x = 4$
  - d)  $-9 = 3x$
  
2. Use a model to solve each equation.  
Verify the solution.
  - a)  $5x + 4 = 44$
  - b)  $7 + 2x = 1$
  - c)  $30 = 4x - 6$
  - d)  $-2x + 8 = 0$
  
3. Five less than six times a number is 13.  
Let  $n$  represent the number.
  - a) Write an equation you can use to solve for  $n$ .
  - b) Use a model to solve the equation.  
What is the number?
  - c) Verify the solution.
  
4. Jack and Diane went to the movies.  
They each paid the same amount for an admission ticket.  
Together, they spent \$12 on snacks.  
The total cost of admission and snacks for Jack and Diane was \$26.  
How much was each admission ticket?
  - a) Choose a variable.  
Write an equation you could use to solve this problem.
  - b) Use a model to solve the equation.
  - c) Verify the solution.
  
5. Use a model to solve each equation.  
Verify the solution.
  - a)  $4x + 3 = 23$
  - b)  $-4x + 3 = 23$
  - c)  $4x - 3 = -23$
  - d)  $-4x - 3 = -23$
  - e)  $3x - 4 = 23$
  - f)  $-3x - 4 = 23$

## Extra Practice 1 Answers

1. a)  $x = 8$  b)  $x = 5$  c)  $x = -4$  d)  $x = -3$

2. a)  $x = 8$                       b)  $x = -3$   
c)  $x = 9$                         d)  $x = 4$

3. a)  $6n - 5 = 13$   
b)  $n = 3$ ; the number is 3.  
c) Left side =  $6(3) - 5 = 18 - 5 = 13 =$  Right side

4. a) Let  $c$  represent the cost of admission.  
An equation is:  $2c + 12 = 26$   
b)  $n = 7$ ; each admission ticket was \$7.00.  
c) L.S. =  $2(7) + 12 = 14 + 12 = 26 =$  R.S.

5. a)  $x = 5$                       b)  $x = -5$   
c)  $x = -5$                       d)  $x = 5$   
e)  $x = 9$                         f)  $x = -9$

**Lesson 6.2: Solving Equations Using Algebra**

1. Solve each equation. Verify the solution.
  - a)  $4x = 32$
  - b)  $-35 = -5x$
  - c)  $-48 = 8x$
  - d)  $9x = 54$
  
2. Solve each equation. Verify the solution.
  - a)  $-8a + 11 = 27$
  - b)  $12b + 21 = 93$
  - c)  $-42 = 5c - 27$
  - d)  $6f - 15 = -45$
  
3. Solve each equation. Verify the solution.
  - a)  $2x - 7 = 9$
  - b)  $-4x + 6 = -14$
  - c)  $6x - 7 = -19$
  - d)  $-7x - 8 = 13$
  
4. Solve each equation. Verify the solution.
  - a)  $2a + 3 = 4$
  - b)  $15 = 10 + 2b$
  - c)  $3 = 5c - 6$
  - d)  $9f - 7 = 1$
  
5. Write an equation you can use to answer each question. Solve the equation. Verify the solution.
  - a) Five more than two times a number is 17.  
What is the number?
  - b) Six less than five times a number is 29.  
What is the number?
  
6. The Grade 8 students had a graduation dinner. They paid a flat rate of \$125 for the use of the hall, plus \$13 for each student who attended. The total cost of the dinner was \$944. How many students attended the dinner?
  - a) Write an equation you could use to solve the problem.
  - b) Solve the equation. Verify the solution.
  
7. Use this information:  
Ice rental: \$150                      Skate rental: \$3
  - a) Write a problem that can be solved using an equation.
  - b) Write the equation, then solve the problem.

## Extra Practice 2 Answers

1. a)  $x = 8$       b)  $x = 7$   
c)  $x = -6$       d)  $x = 6$

2. a)  $a = -2$       b)  $b = 6$   
c)  $c = -3$       d)  $f = -5$

3. a)  $x = 8$       b)  $x = 5$   
c)  $x = -2$       d)  $x = -3$

4. a)  $a = \frac{1}{2}$ , or 0.5      b)  $b = \frac{5}{2}$ , or 2.5  
c)  $c = \frac{9}{5}$ , or 1.8      d)  $f = \frac{8}{9}$

5. Let  $n$  represent the number.

a)  $2n + 5 = 17$ ;  $n = 6$

b)  $5n - 6 = 29$ ;  $n = 7$

6. a) Let  $n$  represent the number of students.

$$125 + 13n = 944$$

b)  $n = 63$ ; 63 students

$$\text{Left side} = 125 + 13n = 125 + 13(63) =$$

$$125 + 819 = 944 = \text{Right side}$$

7. a) Ice rental at the local skating rink is \$150 for 2 h. Skate rental is \$3 per person. The Grade 8 class went skating. All students rented skates. The total cost was \$231. How many students went skating?

b)  $150 + 3n = 231$

$n = 27$ ; 27 students went skating.

**Lesson 6.3: Solving Equations Involving Fractions**

1. Solve each equation. Verify the solution.

a)  $\frac{t}{4} = 7$

b)  $\frac{a}{3} = 9$

c)  $\frac{b}{7} = 11$

d)  $\frac{c}{6} = 12$

2. Solve each equation. Verify the solution.

a)  $\frac{d}{5} = -8$

b)  $\frac{f}{-6} = 10$

c)  $\frac{k}{-2} = -11$

d)  $\frac{q}{3} = -12$

3. One-quarter of the chicken pieces in the dish are wings. There are 7 wings. How many chicken pieces are in the dish?

a) Write an equation you can use to solve the problem.

b) Solve the equation.

c) Verify the solution.

4. Solve each equation.

Verify the solution.

a)  $\frac{n}{3} - 2 = 10$

b)  $4 - \frac{p}{5} = 13$

c)  $\frac{t}{-9} + 8 = -5$

d)  $-17 + \frac{n}{-3} = 9$

5. For each sentence, write an equation.

Solve the equation to find the number.

a) A number divided by  $-4$  is  $7$ .

b) Add  $4$  to a number divided by  $-3$  and the sum is  $-2$ .

c) Subtract a number divided by  $6$  from  $1$  and the difference is  $5$ .

6. Check this student's work. Rewrite a correct and complete algebraic solution if necessary.

$$\frac{t}{-6} - 24 = -6$$

$$\frac{t}{-6} - 24 + 24 = -6 + 24$$

$$\frac{t}{-6} = 18$$

$$t = -3$$

## Extra Practice 3 Answers

1. a)  $t = 28$       b)  $a = 27$   
c)  $b = 77$       d)  $c = 72$

2. a)  $d = -40$       b)  $f = -60$   
c)  $k = 22$       d)  $q = -36$

3. Let  $c$  represent the number of chicken pieces in the dish.

a)  $\frac{c}{4} = 7$

b)  $c = 28$ , there are 28 chicken pieces  
in the dish.

c) It makes sense because  $\frac{1}{4}$  of the pieces are  
wings and  $\frac{1}{4}$  of 28 is 7.

4. a)  $n = 36$       b)  $p = -45$   
c)  $t = 117$       d)  $n = -78$

5. a)  $\frac{n}{-4} = 7; n = -28$

b)  $\frac{n}{-3} + 4 = -2; n = 18$

c)  $1 - \frac{n}{6} = 5; n = -24$

6. The solution is correct until the last line.

The student multiplied the left side by  $-6$  and divided the right side by  $-6$ . Both sides should have been multiplied by  $-6$ .

$$\frac{t}{-6} = 18$$

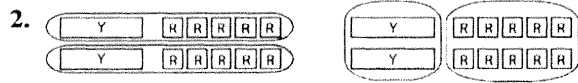
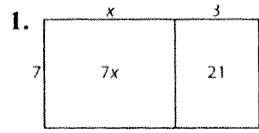
$$\text{Then, } (-6)\left(\frac{t}{-6}\right) = (18)(-6)$$

$$t = -108$$

**Lesson 6.4: The Distributive Property**

1. Draw a rectangle to show that  $7(x + 3)$  and  $7x + 21$  are equivalent.
2. Draw algebra tiles to show that  $2(n - 5)$  and  $2n - 10$  are equivalent.
3. Expand.
  - a)  $5(x + 6)$
  - b)  $7(5 - e)$
  - c)  $3(-x + 8)$
  - d)  $-4(6 - e)$
  - e)  $8(-2n + 4)$
  - f)  $-3(11y + 7)$
  - g)  $7(5n - 4)$
  - h)  $-4(-11y + 3)$
4. Lottery tickets are sold by a local charity to raise money for cancer research. Each ticket costs \$100. Some people pay with a \$100 bill and some pay with a \$100 cheque. Write two expressions you can use to calculate the total amount of money collected. Let  $b$  represent the number of \$100 bills received. Let  $c$  represent the number of \$100 cheques received.
5. Which pairs of expressions are equivalent? Explain your reasoning.
  - a)  $4x + 60$  and  $4(x + 15)$
  - b)  $c + 4$  and  $4 + c$
  - c)  $4 + 2b$  and  $6b$
  - d)  $3(a + 5)$  and  $8 + 3a$
6. A school uniform consists of a shirt and a pair of shorts. A shirt costs \$22. A pair of shorts costs \$15.
  - a) Write two different expressions to find the cost of supplying 8 students with uniforms.
  - b) Evaluate each expression. Which expression did you find easier to evaluate? Justify your choice.
7. Expand.
  - a)  $2(3 + 4y + 7)$
  - b)  $3(9a - 5 - 6)$
  - c)  $-9(-4 - 7c + 10)$

## Extra Practice 4 Answers



3. a)  $5x + 30$       b)  $35 - 7e$   
 c)  $-3x + 24$      d)  $-24 + 4e$   
 e)  $-16n + 32$     f)  $-33y - 21$   
 g)  $35n - 28$       h)  $44y - 12$

4.  $100(b + c)$  or  $100b + 100c$

5. a) Yes;  $4(x + 15) = 4x + 4(15) = 4x + 60$   
 b) Yes; when you add, order does not matter.  
 c) No; only like terms can be added.  
 Since 4 and  $2b$  are not like terms,  
 $4 + 2b \neq 6b$   
 d) No;  $3(a + 5) = 3a + 15 \neq 8 + 3a$

6. a)  $8(22) + 8(15)$  or  $8(22 + 15)$   
 b)  $8(22) + 8(15) = 176 + 120 = 296$   
 $8(22 + 15) = 8(37) = 296$

7. a)  $8y + 20$   
 b)  $27a - 33$   
 c)  $63c - 54$



## Extra Practice 5

## Lesson 6.5: Solving Equations Involving the Distributive Property

- Solve each equation using the distributive property. Verify the solution.
  - $5(a + 2) = -5$
  - $4(p - 6) = -4$
  - $10(y + 3) = 10$
  - $7(r - 6) = 7$
- Solve each equation. Verify the solution.
  - $-7(b + 6) = -84$
  - $-5(q - 11) = 70$
  - $-9(d - 3) = -45$
  - $-6(f - 5) = 36$
- At the fair, 5 friends each bought an \$8 meal voucher and one ice-cream voucher. The total cost of the vouchers was \$55. What was the price of an ice-cream voucher?
  - Choose a variable to represent the price of an ice-cream voucher. Write an equation to model this problem.
  - Solve the equation using the distributive property.
  - Verify the solution. Explain your thinking in words.
- Scott bought 54 m of fencing to enclose a rectangular plot of land. The width of the rectangular plot is 12 m. Assume Scott uses all the fencing. What is the length of the rectangular plot of land?
  - Choose a variable to represent the length of the rectangular plot of land. Write an equation to model this problem.
  - Solve the equation using the distributive property.
  - Verify the solution. Explain your thinking in words.
- Heather chose an integer. She added 9, then multiplied the sum by  $-4$ . The product was  $-16$ . Which integer did Heather choose?
  - Write an equation you can use to solve the problem.
  - Solve the equation.
  - Verify the solution.
- Solve each equation. Verify the solution.
  - $-7(a + 3) = -14$
  - $-5(7 - r + 11) = 10$
  - $-7(b - 3) = -13$
  - $-6(-3 + t - 5) = 10$

## Extra Practice 5 Answers

1. a)  $a = -3$       b)  $p = 5$   
c)  $y = -2$       d)  $r = 7$

2. a)  $b = 6$       b)  $q = -3$   
c)  $d = 8$       d)  $f = -1$

3. Let  $i$  represent the price of one ice-cream voucher in dollars.

a)  $5(8 + i) = 55$

b)  $i = 3$ ; each ice-cream voucher was \$3.

c) \$3 makes sense because the cost of a meal voucher and an ice-cream voucher is  $\$8 + \$3 = \$11$ . There were 5 friends, so the total cost of the vouchers would be  $5 \times \$11 = \$55$ .

4. a) Let  $l$  represent the length of the rectangular plot of land in metres.

$$54 = 2(l + 12)$$

b)  $l = 15$ ; the plot of land has length 15 m.

c) 15 m makes sense because the perimeter of the rectangular plot of land is:  
 $15 \text{ m} + 12 \text{ m} + 15 \text{ m} + 12 \text{ m} = 54 \text{ m}$

5. a) Let  $i$  represent the integer.

$$-4(i + 9) = -16$$

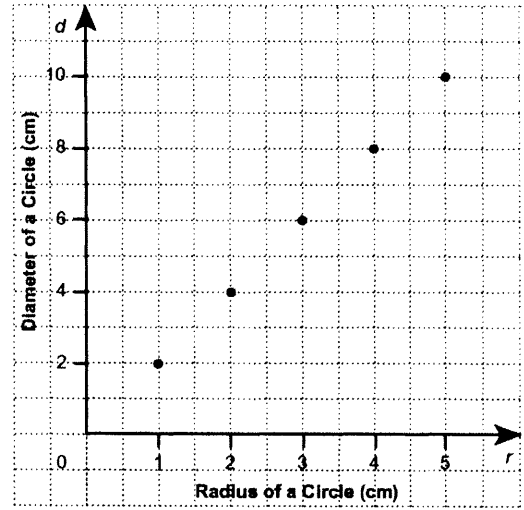
b)  $i = -5$ ; the integer is  $-5$ .

c) Left side =  $-4(-5 + 9) = -4(4) = -16 =$  Right side

6. a)  $a = -1$  b)  $r = 20$  c)  $b = \frac{34}{7}$  d)  $t = \frac{19}{3}$

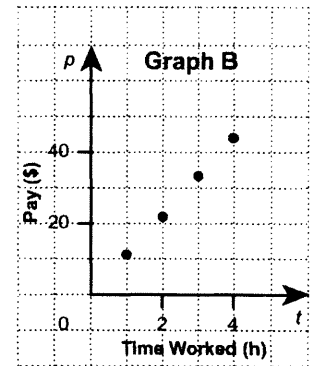
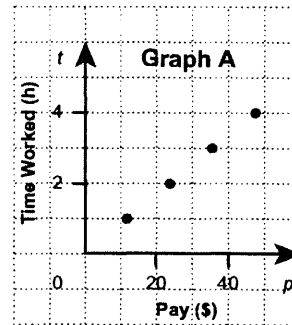
# Target E-2 Extra Practice 1

1. a) Make a table of values from the graph.
- b) What is the diameter of a circle with a radius of 8 cm?
- c) What is the radius of a circle with a diameter of 22 cm?
- d) Is it reasonable to include a point on the graph for  $r = 4.5$  cm? Explain.



2. Nikki is making a graph of the data in the table of values:

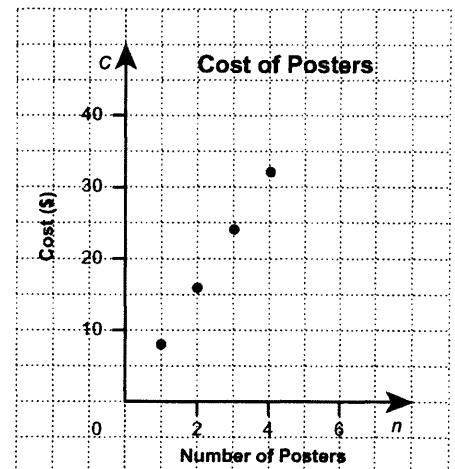
Time Worked, $t$ (h)	Pay, $P$ (\$)
1	11
2	22
3	33
4	44



Does one of the graphs show the data from the table? Explain.

3. a) Copy the table of values into your notebook. Look at the points on the graph to complete the table of values.

Number of Posters, $n$	Cost, $C$ (\$)
1	8
2	16



- b) What would be the cost of six posters?
- c) Would it be reasonable to have points between the ones on the graph? Explain.

## Extra Practice Answers

1. a)

Radius of a Circle (cm)	1	2	3	4	5
Diameter of a Circle (cm)	2	4	6	8	10

b) 16 cm

c) 11 cm

d) Yes. It is possible to have a radius that is 4.5 cm.

2. Graph B

3. a)

Number of Posters, $n$	1	2	3	4
Cost, $C$ (\$)	8	16	24	32

b)  $6 \times 8 = \$48$

c) No. You cannot buy part of a poster.

# Target E-2 Extra Practice 2

1. a) Graph the ordered pairs in the table of values.

<b>x</b>	0	1	2	3	4	5
<b>y</b>	0	5	10	15	20	25

- b) What is the difference in value for consecutive  $x$ -values? What is the difference in value for consecutive  $y$ -values?
- c) What is an expression for  $y$  in terms of  $x$ ?

2. For each table of values, tell whether the relationship is linear. Explain how you know.

a)

<b>s</b>	2	3	4	5	6
<b>t</b>	5	9	15	19	25

b)

<b>h</b>	<b>i</b>
7	-6
4	-3
1	0

3. For the following table of values, graph the ordered pairs. Does the relationship appear to be linear? Explain.

<b>u</b>	0	2	3	6
<b>v</b>	3	9	12	21

4. Mahesha has \$100 altogether, in \$10 bills and \$5 bills.

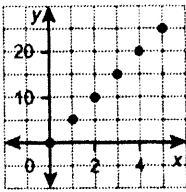
- a) Copy and fill in the table of values to show at least five possible combinations of \$10 bills and \$5 bills that Mahesha may have. Add columns to the table if necessary.

<b>Number of \$10 Bills</b>					
<b>Number of \$5 Bills</b>					

- b) Draw a graph of the data. Does the relationship appear linear? Explain.
- c) Is it possible for Mahesha to have 19 \$5 bills? Explain.

**Extra Practice Answers**

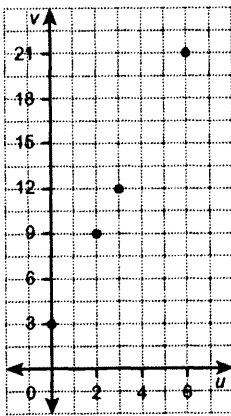
1. a)



- b) The difference in x-values is 1. The difference in y-values is 5.
- c)  $5x$

- 2. a) The relationship is not linear. Consecutive values of  $s$  always increase by 1, but consecutive values of  $t$  do not always increase by the same amount.
- b) The relationship is linear. Consecutive values of  $h$  always decrease by 3, and consecutive values of  $I$  always increase by 3.

3.



Yes. The points appear to lie along a straight line.

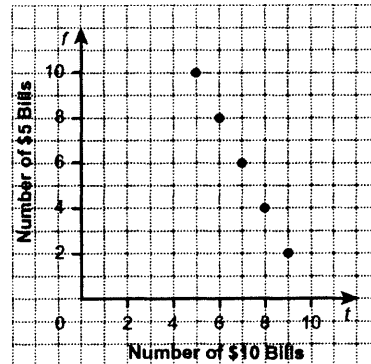
4. a)

<b>Number of \$10 Bills</b>	5	6	7	8	9
<b>Number of \$5 Bills</b>	10	8	6	4	2

Yes. The points appear to lie along a straight line.

- c) No. Nineteen \$5 bills results in \$95, and  $\$95 + \$10 \neq \$100$ .

b)

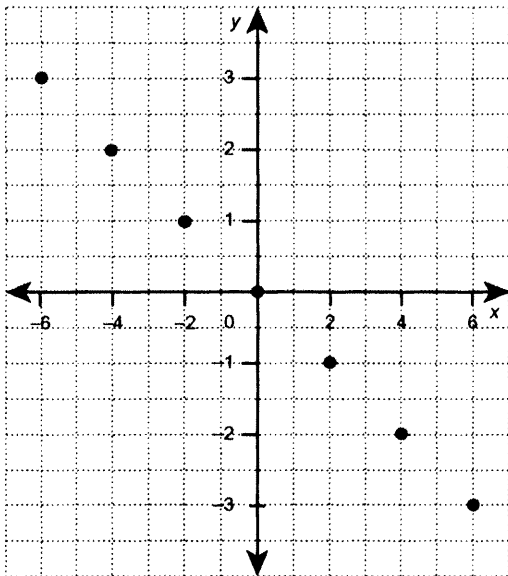


## Target E-2 Extra Practice 3

1. Consider the linear equation  $y = 3x - 1$ .

- Make a table of values using  $x = -2, -1, 0, 1, 2$ .
- Graph the ordered pairs from the table.
- Use the equation to calculate  $y$  when  $x = 4$ .
- For the point  $(x, -10)$ , what is the value of  $x$ ?

2. The graph below represents part of the linear relation  $y = \frac{x}{-2}$ .



- Use the graph to estimate  $y$  when  $x = -1$ .
- Use the equation to calculate  $y$  when  $x = 16$ .
- For the point  $(x, 3.5)$ , estimate the value of  $x$  from the graph.

3. a) Graph the ordered pairs from the table of values.

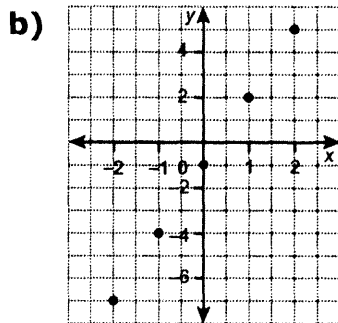
<b>x</b>	0	1	2	3	4
<b>y</b>	0	1	4	9	16

- Is this a linear relation? Use two different ways to explain your answer.

## Extra Practice Answers

1. a)

<b>x</b>	-2	-1	0	1	2
<b>y</b>	-7	-4	-1	2	5



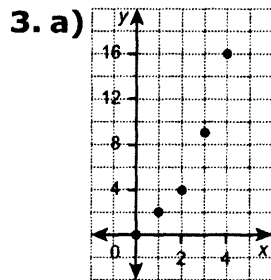
c)  $3(4) - 1 = y$   
 $12 - 1 = y$   
 $11 = y$

d)  $-10 = 3x - 1$   
 $-9 = 3x$   
 $-3 = x$

2. a)  $y = 0.5$

b)  $\frac{16}{-2} = y, -8 = y$

c)  $x = -7$



- b) No. 1. The points do not lie along a straight line. 2. The difference between consecutive values of  $x$  are the same but the difference between consecutive values of  $y$  are not the same.



## Lesson 6.6: Creating a Table of Values

1. Copy and complete each table of values.

a)  $y = x + 5$

$x$	$y$
1	
2	
3	
4	
5	

b)  $y = x - 1$

$x$	$y$
1	
2	
3	
4	
5	

c)  $y = -2x$

$x$	$y$
1	
2	
3	
4	
5	

2. Copy and complete each table of values.

a)  $y = 2x - 5$

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

b)  $y = -3x + 1$

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

c)  $y = -2x - 5$

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

3. The equation of a linear relation is:
- $y = -3x + 8$

Some ordered pairs in the relation are:

 $(-1, 11)$ ,  $(0, 8)$ ,  $(1, \quad)$ ,  $(2, 2)$ ,  $(\quad, -1)$ ,  $(4, \quad)$ 

Find the missing numbers in the ordered pairs.

4. The cost of admission to a fair is \$10, plus \$3 per ride. An equation for this relation is
- $C = 10 + 3r$
- , where
- $r$
- represents the number of rides a person goes on, and
- $C$
- represents the total cost of admission and rides.

a) Use the equation to create a table of values.

b) Harvey went on 13 rides. How much did Harvey spend on admission and rides?

c) Stephanie spent \$31 on admission and rides. How many rides did Stephanie go on?

5. These ordered pairs are in the same linear relation.

 $(-3, -11)$ ,  $(-2, -9)$ ,  $(-1, \quad)$ ,  $(0, -5)$ ,  $(\quad, -3)$ ,  $(2, \quad)$ ,  $(3, \quad)$ 

Find the missing numbers in the ordered pairs. Describe the strategy you used.

## Extra Practice 6 Answers

1. a)

$x$	$y$
1	6
2	7
3	8
4	9
5	10

b)

$x$	$y$
1	0
2	1
3	2
4	3
5	4

c)

$x$	$y$
1	-2
2	-4
3	-6
4	-8
5	-10

2. a)

$x$	$y$
-3	-11
-2	-9
-1	-7
0	-5
1	-3
2	-1
3	1

b)

$x$	$y$
-3	10
-2	7
-1	4
0	1
1	-2
2	-5
3	-8

c)

$x$	$y$
-3	1
-2	-1
-1	-3
0	-5
1	-7
2	-9
3	-11

3.  $(1, 5), (3, -1), (4, -4)$

4. a)

$r$	$C$
1	13
2	16
3	19
4	22
5	25
6	28

b) \$49

c) Stephanie went on 7 rides.

5.  $(-1, -7), (1, -3), (2, -1), (3, 1)$

I looked at the number patterns:  $-3, -2, -1, 0, 1, 2, 3$  and  $-11, -9, -7, -5, -3, -1, 1$

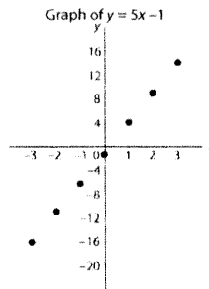
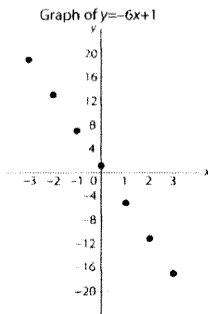
**Lesson 6.7: Graphing Linear Relations**

1. Each graph below is a graph of a linear relation.

Describe the relationship between the variables in each graph.

a)  $y = -6x + 1$

b)  $y = 5x - 1$



2. Graph each relation for integer values of  $x$  from  $-3$  to  $3$ .

a)  $y = x$

b)  $y = -x$

c)  $y = -2x + 5$

d)  $y = 2x + 5$

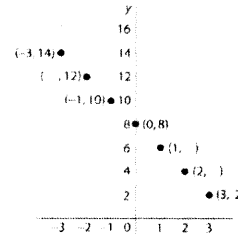
3. Here is a graph of the linear relation  $y = -2x + 8$ .

Each point on the graph is labelled with an ordered pair.

Some numbers in the ordered pairs are missing.

Find the missing numbers.

Explain how you did this.



4. The cost of admission to a fair is \$10, plus \$3 per ride. An equation for this relation is  $C = 10 + 3r$ , where  $r$  represents the number of rides a person goes on, and  $C$  represents the total cost of admission and rides.

a) Make a table of values for the relation.

b) Graph the relation.

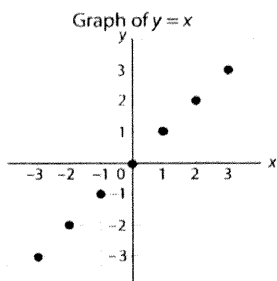
c) Describe the relationship between the variables in the graph.

d) Find the ordered pair on the graph that shows the number of rides Josh went on when his cost of admission and rides was \$22.

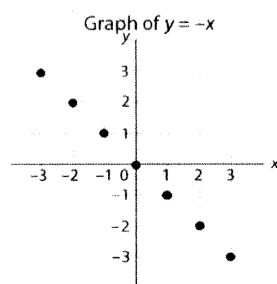
## Extra Practice 7 Answers

1. a) As  $x$  increases by 1,  $y$  decreases by 6. The graph is a line that goes down to the right.  
b) As  $x$  increases by 1,  $y$  increases by 5. The graph is a line that goes up to the right.

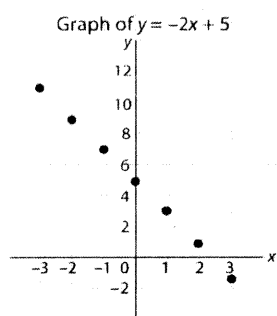
2. a)



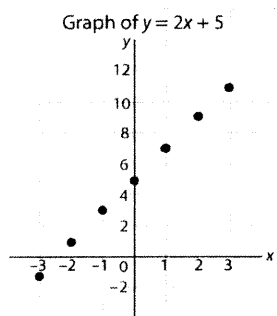
b)



c)



d)



3.  $(-2, 12), (1, 6), (2, 4)$

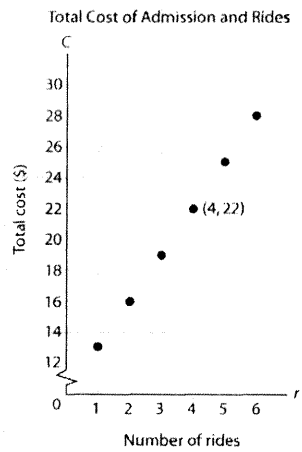
I used the patterns in the graph:

As  $x$  increases by 1,  $y$  decreases by 2.

4. a)

$r$	$C$
1	13
2	16
3	19
4	22
5	25
6	28

b)



c) As  $r$  increases by 1,  $C$  increases by 3. The graph is a line that goes up to the right.

d)  $(4, 22)$ ; Josh rode on 4 rides.