

Curriculum Outcomes:

(PR1) Generalize a pattern arising from a problem-solving context using linear equations and verify by substitution.

(PR2) Graph linear relations, analyze the graph and interpolate or extrapolate to solve problems.

Student Friendly: Being able to identify a linear pattern in a t-table.

$$\begin{array}{c|c} \Delta x = & y \\ \hline x & \\ \hline -3 & \\ 0 & \\ 3 & \end{array}$$

$$y = \frac{\Delta y}{\Delta x} x + \#$$

$$y = \frac{2}{3}x + 3$$

$$x = 0$$

$$y = -$$

$$(0, -)$$

$$\frac{\Delta y}{\Delta x} =$$

$$x = \#$$

vert

$$y = \#$$

horiz

$$x + y = \# \quad \text{oblique}$$

Homework Questions??

Unit test Monday

Review for Test Page 201 - 203

1(c, d,e,f,g),	12,
4,	13,
5(b, c),	14,
8,	15,
10,	17
11,	



Extra Practice
worksheets



Lesson 4.2: Linear Relations

1. For each table of values below:
- Does it represent a linear relation?
 - If the relation is not linear, explain how you know.
 - If the relation is linear, describe it.

a)	<table border="1"><thead><tr><th>x</th><th>y</th></tr></thead><tbody><tr><td>1</td><td>5</td></tr><tr><td>2</td><td>12</td></tr><tr><td>3</td><td>19</td></tr><tr><td>4</td><td>26</td></tr><tr><td>5</td><td>33</td></tr></tbody></table>	x	y	1	5	2	12	3	19	4	26	5	33
x	y												
1	5												
2	12												
3	19												
4	26												
5	33												

b)	<table border="1"><thead><tr><th>x</th><th>y</th></tr></thead><tbody><tr><td>1</td><td>1</td></tr><tr><td>3</td><td>3</td></tr><tr><td>5</td><td>7</td></tr><tr><td>7</td><td>13</td></tr><tr><td>9</td><td>21</td></tr></tbody></table>	x	y	1	1	3	3	5	7	7	13	9	21
x	y												
1	1												
3	3												
5	7												
7	13												
9	21												

c)	<table border="1"><thead><tr><th>x</th><th>y</th></tr></thead><tbody><tr><td>4</td><td>11</td></tr><tr><td>2</td><td>14</td></tr><tr><td>0</td><td>17</td></tr><tr><td>-2</td><td>20</td></tr><tr><td>-4</td><td>23</td></tr></tbody></table>	x	y	4	11	2	14	0	17	-2	20	-4	23
x	y												
4	11												
2	14												
0	17												
-2	20												
-4	23												

d)	<table border="1"><thead><tr><th>x</th><th>y</th></tr></thead><tbody><tr><td>-2</td><td>-12</td></tr><tr><td>-1</td><td>-5</td></tr><tr><td>0</td><td>0</td></tr><tr><td>1</td><td>3</td></tr><tr><td>2</td><td>4</td></tr></tbody></table>	x	y	-2	-12	-1	-5	0	0	1	3	2	4
x	y												
-2	-12												
-1	-5												
0	0												
1	3												
2	4												

2. Each table of values represents a linear relation. Complete each table. Explain your reasoning.

a)	<table border="1"><thead><tr><th>x</th><th>y</th></tr></thead><tbody><tr><td>1</td><td></td></tr><tr><td>2</td><td></td></tr><tr><td>3</td><td>14</td></tr><tr><td>4</td><td>18</td></tr><tr><td>5</td><td></td></tr></tbody></table>	x	y	1		2		3	14	4	18	5	
x	y												
1													
2													
3	14												
4	18												
5													

b)	<table border="1"><thead><tr><th>x</th><th>y</th></tr></thead><tbody><tr><td>1</td><td></td></tr><tr><td>3</td><td>3</td></tr><tr><td>5</td><td>-1</td></tr><tr><td>7</td><td></td></tr><tr><td>9</td><td></td></tr></tbody></table>	x	y	1		3	3	5	-1	7		9	
x	y												
1													
3	3												
5	-1												
7													
9													

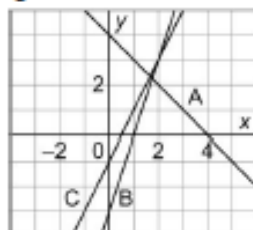
c)	<table border="1"><thead><tr><th>x</th><th>y</th></tr></thead><tbody><tr><td>4</td><td></td></tr><tr><td>2</td><td>14</td></tr><tr><td>0</td><td>19</td></tr><tr><td>-2</td><td></td></tr><tr><td>-4</td><td></td></tr></tbody></table>	x	y	4		2	14	0	19	-2		-4	
x	y												
4													
2	14												
0	19												
-2													
-4													

3. Create a table of values for each linear relation and then graph the relation. Use values of x from -2 to 2 .
- a) $y = x + 4$ b) $y = 2x + 1$ c) $y = 5 - 2x$
4. A computer repair company charges \$80 for a service call, plus \$50 an hour for labour.
- Create a table to show the relation between the time in hours for the service call and the total cost.
 - Is this relation linear? Justify your answer.
 - Let n represent the time in hours for the service call and C represent the total cost in dollars. Write an equation that relates C and n .
 - How much will a 7-h service call cost?

Lesson 4.4: Matching Equations and Graphs

1. Match each equation with a graph on this grid.

- a) $y = 2x - 1$
- b) $y = -x + 4$
- c) $y = 3x - 3$



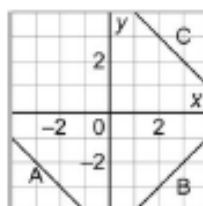
2. Match each equation with a graph on this grid.

- a) $y = -1$
- b) $0 = -x + 1$
- c) $2 = 2x - 3$



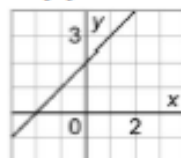
3. Match each equation with a graph on this grid. Justify your answers.

- a) $x + y = 5$
- b) $x - y = 5$
- c) $x + y = -5$



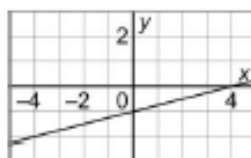
4. Which equation describes this graph? Justify your answers.

- a) $y = x + 2$
- b) $y = -x + 2$
- c) $y = x - 2$



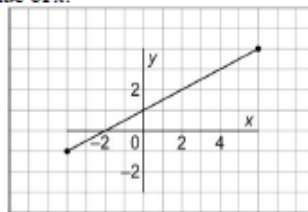
5. Which equation describes this graph? Justify your answers.

- a) $x - y = 4$
- b) $x - 4y = 4$
- c) $4x - y = 1$

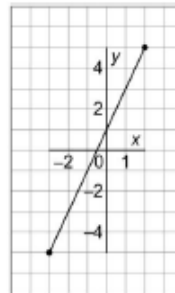


Lesson 4.5: Using Graphs to Estimate Values

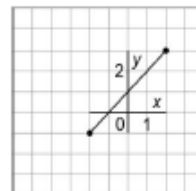
1. This graph represents a linear relation.
 - a) Determine the value of x for each value of y .
 - i) $y = 1$
 - ii) $y = 3$
 - iii) $y = 0$
 - b) Determine the value of y for each value of x .
 - i) $x = 2$
 - ii) $x = 8$
 - iii) $x = -6$



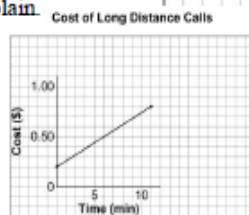
2. This graph represents a linear relation.
 - a) Determine the value of x for each value of y .
 - i) $y = 3$
 - ii) $y = -2$
 - iii) $y = 7$
 - b) Determine the value of y for each value of x .
 - i) $x = 0$
 - ii) $x = -2$
 - iii) $x = -4$



3. This graph represents a linear relation.
 - a) Determine the value of x for each value of y .
 - i) $y = 2$
 - ii) $y = 0$
 - iii) $y = 5$
 - b) Determine the value of y for each value of x .
 - i) $x = 0$
 - ii) $x = 3$
 - iii) $x = -5$



4. The graph shows how the cost of a long distance call changes with the time for the call.
 - a) Estimate the cost of a 7-min call.
Is this interpolation or extrapolation? Explain.
 - b) The cost of a call was \$1.00.
Estimate the time for the call.
 - c) The cost of a call was \$1.50.
Estimate the time for the call.



Extra Practice 1 – Master 4.20

Lesson 4.1

- 7
 - 7
 - 15
 - 24
- The correct equation is $P = 3n + 4$.
- The first term is 8 and as t increases by 1, v increases by 5.
ii) $v = 5t + 3$
 - The first term is 34 and as t increases by 1, v decreases by 3.
ii) $v = 37 - 3t$
-

Number of Days Away, n	Charge, C (\$)
1	10.50
2	13.00
3	15.50
4	18.00
5	20.50

- $C = 2.5n + 8$
- \$43
- 10 days

Extra Practice 2 – Master 4.21

Lesson 4.2

- Yes
 - As x increases by 1, y increases by 7.
 - No
 - As x increases by 2, y does not increase by a constant number.
- Yes
 - As x decreases by 2, y increases by 3.
- No
 - As x increases by 1, y does not increase by a constant number.

2.

a)	<table border="1"><tr><th>x</th><th>y</th></tr><tr><td>1</td><td>6</td></tr><tr><td>2</td><td>10</td></tr><tr><td>3</td><td>14</td></tr><tr><td>4</td><td>18</td></tr><tr><td>5</td><td>22</td></tr></table>	x	y	1	6	2	10	3	14	4	18	5	22
x	y												
1	6												
2	10												
3	14												
4	18												
5	22												

b)	<table border="1"><tr><th>x</th><th>y</th></tr><tr><td>1</td><td>7</td></tr><tr><td>3</td><td>3</td></tr><tr><td>5</td><td>-1</td></tr><tr><td>7</td><td>-5</td></tr><tr><td>9</td><td>-9</td></tr></table>	x	y	1	7	3	3	5	-1	7	-5	9	-9
x	y												
1	7												
3	3												
5	-1												
7	-5												
9	-9												

c)	<table border="1"><tr><th>x</th><th>y</th></tr><tr><td>4</td><td>9</td></tr><tr><td>2</td><td>14</td></tr><tr><td>0</td><td>19</td></tr><tr><td>-2</td><td>24</td></tr><tr><td>-4</td><td>29</td></tr></table>	x	y	4	9	2	14	0	19	-2	24	-4	29
x	y												
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2	14												
0	19												
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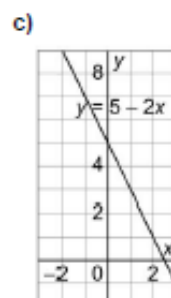
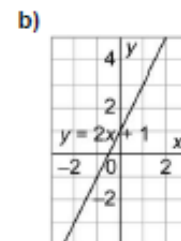
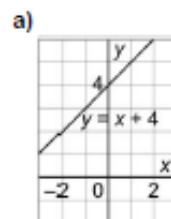
- As x increases by 1, y increases by 4.
- As x increases by 2, y decreases by 4.
- As x decreases by 2, y increases by 5.

3.

a)	<table border="1"><tr><th>x</th><th>y</th></tr><tr><td>-2</td><td>2</td></tr><tr><td>-1</td><td>3</td></tr><tr><td>0</td><td>4</td></tr><tr><td>1</td><td>5</td></tr><tr><td>2</td><td>6</td></tr></table>	x	y	-2	2	-1	3	0	4	1	5	2	6
x	y												
-2	2												
-1	3												
0	4												
1	5												
2	6												

b)	<table border="1"><tr><th>x</th><th>y</th></tr><tr><td>-2</td><td>-3</td></tr><tr><td>-1</td><td>-1</td></tr><tr><td>0</td><td>1</td></tr><tr><td>1</td><td>3</td></tr><tr><td>2</td><td>5</td></tr></table>	x	y	-2	-3	-1	-1	0	1	1	3	2	5
x	y												
-2	-3												
-1	-1												
0	1												
1	3												
2	5												

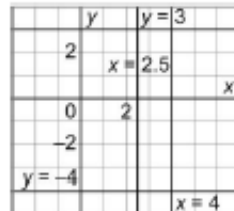
c)	<table border="1"><tr><th>x</th><th>y</th></tr><tr><td>-2</td><td>9</td></tr><tr><td>-1</td><td>7</td></tr><tr><td>0</td><td>5</td></tr><tr><td>1</td><td>3</td></tr><tr><td>2</td><td>1</td></tr></table>	x	y	-2	9	-1	7	0	5	1	3	2	1
x	y												
-2	9												
-1	7												
0	5												
1	3												
2	1												



4. a)

Time, n hours	Total Cost, C (\$)
1	130
2	180
3	230
4	280

- b) Yes, as the time in hours increases by 1, the total cost increases by \$50.
- c) $C = 50n + 80$
- d) \$430



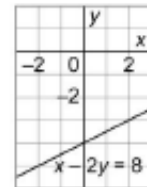
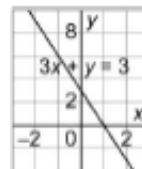
5.

a) $3x + y = 3$

x	y
-2	9
0	3
2	-3

b) $x - 2y = 8$

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



Extra Practice 3 – Master 4.22

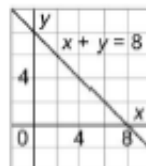
Lesson 4.3

1. a) The graph is a horizontal line that intersects the y -axis at 4.
 b) The graph is a vertical line that intersects the x -axis at 1.
 c) The graph is an oblique line.
 d) The graph is a horizontal line that intersects the y -axis at -3 .

2. a) $y = 2$ b) $x = -2$

3. a) Tables may vary.

x	y
0	8
2	6
4	4
6	2
8	0



- b) Yes, the points should be joined because x and y can have any value between the plotted points.
- c) $x + y = 8$

4. a) A vertical line that intersects the x -axis at 4
 b) A horizontal line that intersects the y -axis at 3
 c) A horizontal line that intersects the y -axis at -4
 d) A vertical line that intersects the x -axis at 2.5

6.

a) $x + y = 6$

x	y
0	6
2	4
4	2

$x - y = -6$

x	y
-4	2
-2	4
0	6

b) An isosceles triangle

Extra Practice 4 – Master 4.23

Lesson 4.4

1. a) Graph C b) Graph A c) Graph B
2. a) Graph C b) Graph A c) Graph B

Master 4.27

**Extra Practice and Activating Prior Knowledge
Sample Answers**

3. Students should make tables of values, or choose points on each line, then substitute coordinates in each equation.
a) Graph C b) Graph B
c) Graph A
4. Students should make tables of values, or choose points on each line, then substitute coordinates in each equation.
 $y = x + 2$
5. $x - 4y = 4$

Extra Practice 5 – Master 4.24**Lesson 4.5**

1. a) i) $x = 0$ ii) $x = 4$
 iii) $x = -2$
 b) i) $y = 2$ ii) $y = 5$
 iii) $y = -2$
2. a) i) $x = 1$ ii) $x = -1.5$
 iii) $x = 3$
 b) i) $y = 1$ ii) $y = -3$
 iii) $y = -7$
3. a) i) $x = 1$ ii) $x = -1$
 iii) $x = 4$
 b) i) $y = 1$ ii) $y = 4$
 iii) $y = -4$
4. a) Approximately \$0.56. This is interpolation because I am reading a data point that lies between the plotted points.
 b) Approximately 13 min
 c) Approximately 22 min

Attachments

Day 3 Monday - 4 Days of Literacy.notebook

Day 30_31_Chapter 4 Test Review_Work sheets.pdf