Chapter 3 BLM Answers

BLM 3–2 Chapter 3 Warm-Up
Section 3.1
1. (2,1), (4, 4), (7, 5), (8, 7), (9, 10)
2. Examples:
a) 3600 g **b)** 1350 g

3. a) 0 **b)** undefined **c)** 1 **d)** −2 **e)** $\frac{1}{2}$

4. Examples:
a) an increasing pattern that starts at 3 and increases by 3 each time
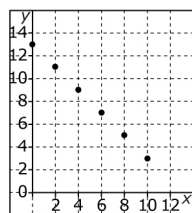**b)** a decreasing pattern that starts at 80 and divides by 2 each time
c) an increasing pattern of squares of whole numbers that starts at the square of 1
5. a) 13 **b)** 8 **c)** 200
Section 3.2
1. Yes; positive
2.

linear trend; negative
3. non-linear. The points do not lie in a straight line.
4. linear. The points lie in a straight line.
5. x: by 1; y: by 3; linear

Section 3.3
1. No. The initial value is not zero and y is not a fixed multiple of x.
2.

x	y
0	0
1	11
2	22
3	33
4	44

3. Yes. The graph is linear because the slope is fixed at $\frac{1}{2}$. The graph intercepts the y-axis at zero.
4. a) 0, 3, 6, 9
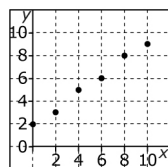**b)** Yes. The initial value is zero and y is a fixed multiple of x.

5. No. The initial value is (0, 3), not zero, and y is not a fixed multiple of x.

BLM 3–3 Section 3.1 Extra Practice
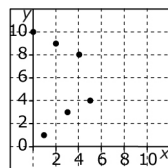**1. a)** Yes; positive **b)** Yes; negative **c)** No
d) Yes; negative
2. a)   **b)**

Yes; positive   Yes; negative
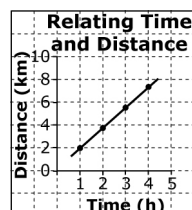**c)**   **d)**

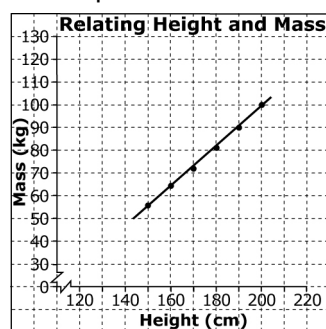No   Yes; negative
3. a)

b) positive linear trend; Example: As the time increases, so does the distance.
c) 1 km; 2.5 h
**4. a)** Example: The points are in a linear pattern.

b) positive linear trend
c) Example: Most of the points are on or close to the line.
d) 60 kg; 175 cm

5. a) linear; Example: The points lie along a straight line.
b) linear; Example: The points lie along a straight line.
c) non-linear; Example: The points do not lie in a straight line.
d) non-linear; Example: The points do not lie in a straight line.
6. a) d **b)** c **c)** a **d)** b
7. a) 10; linear
b) 1, 2, 4, 7; non-linear
c) 20, 14, 8, 2; linear
d) 10, 13, 8, 8; non-linear
8. a) non-linear; Example: The points do not lie along a straight line.
b)
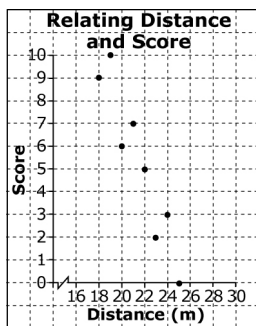
Yes
9. a)

Year	0	1	2	3
Value ($)	16 000	12 000	9 000	6 750

b) non-linear; Example: Although time goes up by 1 each year, the value of the car decreases by a different amount each year.

BLM 3–4 Section 3.2 Extra Practice
1. a) Yes. The initial value is zero, and y is always 12 times x.
b) Yes. The initial value is zero, and y is always 3 times x.
c) No. The initial value is not zero, and y is not a fixed multiple of x.
d) No. The initial value is not zero, and y is not a fixed multiple of x.
2. a) 180 **b)** 25, 75
c) 0, 40, 160 **d)** 0, 25, 50
3. a) 0; 90 km/h **b)** 0; 25 students/class
c) 0; 40 cm/min **d)** 0; $12.50/h
4. a) Yes. The slope is fixed and the graph intercepts the y-axis at zero.
b) No. The graph does not intercept the y-axis at zero.
c) Yes. The slope is fixed and the graph intercepts the y-axis at zero.

d) No. The graph does not intercept the y-axis at zero.
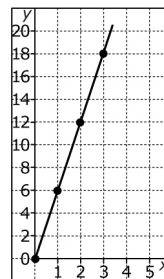**5. a)** 0, 25, 50, 75, 100
b) They increase by 1 and 25.
c) Yes. Example: The slope is constant at 25.
6. a) 0, 6, 12, 18
b) Yes. The slope is constant at 6.
c) The graph would be points in a straight line going upward with a solid line through them. The line would intercept the y-axis at zero and have a slope of 6.

7. a) 10, 30, 50, 70

b) No. The y-intercept is not zero.
8. a) No **b)** Yes **c)** Yes **d)** No
e) No **f)** Yes **g)** Yes **h)** No
9.

Area (ft^2)	Cost ($)
0	0
1	13
2	26
3	39
4	52
5	65
6	78
7	91
8	104
9	117
10	130

10. a)

Time (h)	0	1	2	3	4	5
Earnings ($)	0	16	32	48	64	80

b) $16/h

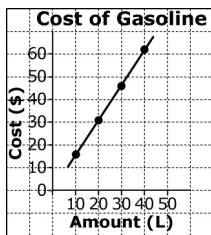**c)** and **d)** Example: I would draw a solid line to show that Robyn gets paid for any number of hours or partial hours worked.
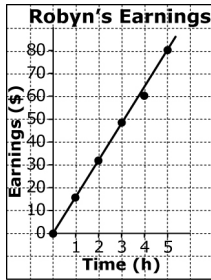
e) 16; (0, 0) **f)** 2.5 h
11. a) $C = 1.55/L$ **b)** $65.10
c) The graph would be points in a straight line going upward with a solid line through them. The line would intercept the y-axis at zero and have a slope of 1.55.

BLM 3–5 Section 3.3 Extra Practice
1. a) No
b) Yes. The y-value is always
2 times the x-value plus 5.
c) No
d) Yes. The y-value is always 3 times the x-value plus 300.
2. a) 375, 400 **b)** 13, 19, 22
c) 15, 25, 35 **d)** 550, 600, 700
3. a) $25/$1; $300 **b)** 3 mm/h; 10 mm
c) $5/h; $15 **d)** $50/year; $500
4. a) No
b) Yes. The slope is fixed and the graph does not intercept the y-axis at zero.
c) No
d) Yes. The slope is fixed and the graph does not intercept the y-axis at zero.
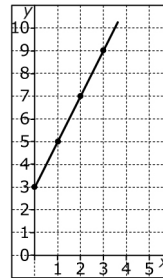**5. a)** 100, 150, 200, 250
b) Yes. The amount at 0 h is $100 and the y-value is not a multiple of the x-value.
6. a)

x	0	1	2	3
y	3	5	7	9

b) Yes. The amount at zero is 3 and the y-value is always 2 times the x-value plus a constant of 3.

c) The graph would be points in a straight line going upward with a solid line through them. The line would intercept the y-axis at 3 and have a slope of 2.

7. a) No **b)** No **c)** No **d)** Yes
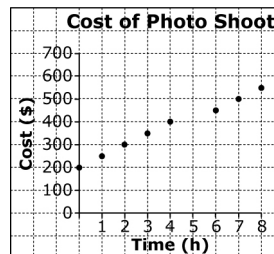**e)** Yes **f)** No **g)** No **h)** No
8. d) 50; 100 **e)** 2; 4
9. a) $200; $50/h **b)** $250
c)

Time (h)	Cost ($)
0	200
1	250
2	300
3	350
4	400
6	450
7	500
8	550

d) The graph would be points in a straight line going upward with a solid line through them. The line would intercept the y-axis at 200 and have a slope of 50.
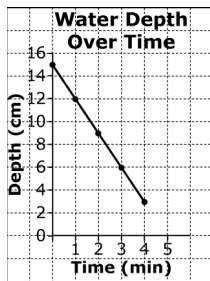

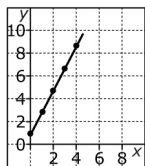**10. a)** 15 cm; 3 cm/min
b)

Time (min)	0	1	2	3	4	5
Depth (cm)	15	12	9	6	3	0

c)

Water Depth Over Time

d) 5 min
11. a) $C = 200 + 10p$ **b)** $1700
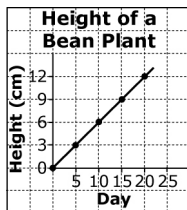
BLM 3–6 Chapter 3 Test
1. B
2. D
3. C
4. a)

b) $y = 2x + 1$
c) Partial variation. The constant amount of 1 is the y-intercept. The y-value is always 2 times the x-value plus 1.
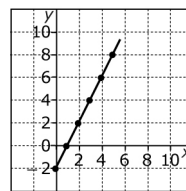**5. a)**

Height of a Bean Plant

b) Example: $H = 0.6d$ or $H = \frac{3}{5}d$

6. a)

x	y
0	−2
1	0
2	2
3	4
4	6
5	8

b)
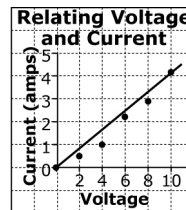

7. a) slope: 1; y-intercept: 1
b) slope: −1; y-intercept: 1
c) slope: 3; y-intercept: 0
d) slope: 2; y-intercept: 3
8. a) $y = 6x + 2$ **b)** $y = 14$
9. a) Example:

Relating Voltage and Current

b) direct variation. The value of C increases directly with the value of V.

c) Example: $V = \frac{5}{2}C$

d) 50 volts
10. a) discrete data: values between plotted points on a graph are not valid; continuous data: values between plotted points on a graph are valid
b) Example:
Discrete: getting paid only for whole numbers of hours worked
Continuous: measuring number of daylight hours and minutes during a year

BLM 3–8 Chapter 3 Sudoku® Puzzle

6	4	5	2	7	8	9	1	3
8	3	9	1	5	4	6	7	2
7	1	2	3	9	6	5	8	4
4	7	6	9	2	3	8	5	1
9	5	3	8	6	1	4	2	7
1	2	8	5	4	7	3	6	9
3	8	7	6	1	9	2	4	5
2	9	1	4	8	5	7	3	6
5	6	4	7	3	2	1	9	8