

Final Review - Unit 4

- In the equation $R = 6(w - 1) + 4$, determine the value of R when $w = 13$.
- This pattern of unit squares continues.
Determine an equation that relates the number of unit squares, n , to the figure number, f .

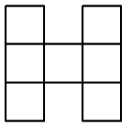


Figure 1

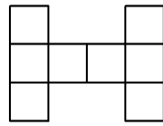


Figure 2

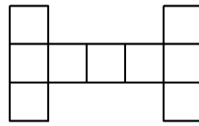


Figure 3

- The pattern in this table continues. Write an equation that relates the number of squares to the figure number.

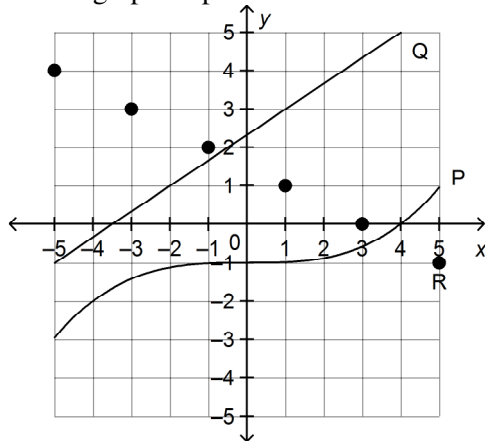
Figure Number, f	1	2	3	4	5
Number of Squares, s	46	42	38	34	30

- The cost of a taxi ride is the sum of a fixed cost of \$2.50 for the first kilometre, plus \$1.75 for each additional kilometre.
 - Write an equation that relates the cost of a taxi ride, F dollars, to the distance travelled, n .
 - Determine the cost of a 28-km taxi ride.

- Which equations represent a linear relation?

- $y = 6x^2$
- $y = 7x + 4$
- $y = \frac{12}{x}$
- $y + 3x = 12$

- Which graphs represent a linear relation?



7. a) Which table of values represents a linear relation?

i)

x	1	2	3	4
y	12	0	-4	-6

ii)

x	1	2	3	4
y	11	7	3	-1

iii)

x	1	2	3	4
y	13	10	5	-2

b) Write an equation that represents the linear relation.

8. This is a partially completed table of values for a linear relation.

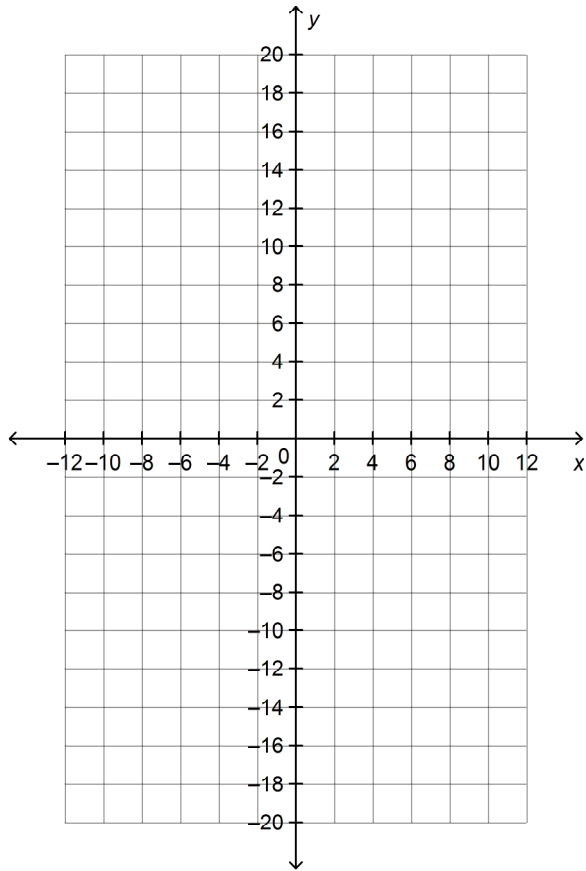
a) Determine the missing values of y .

x	2	3	4	5	6
y			19	22	

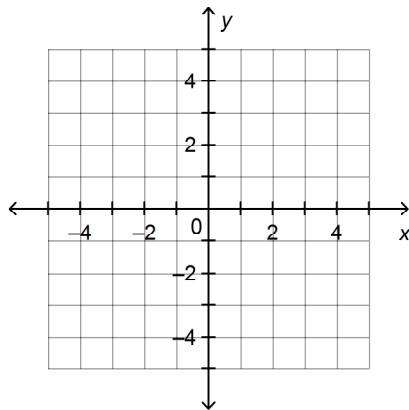
b) Write an equation that represents the linear relation.

9. Create a table of values for the linear relation $y = 4 - 4x$, then graph the relation. Use values of x from 0 to 6.

x	0	1	2	3	4	5	6
y							

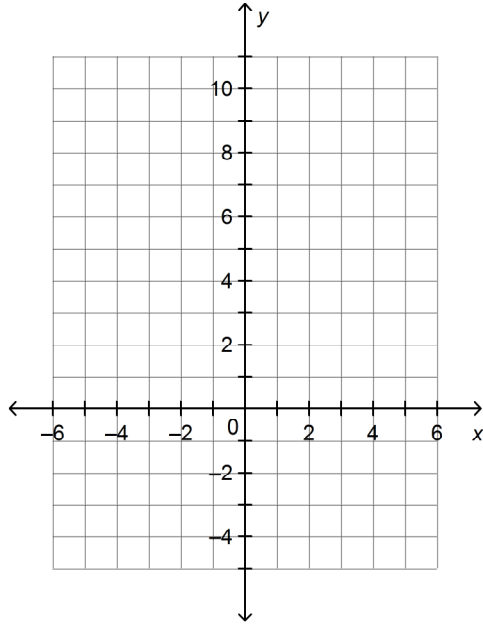


10. Graph the equation $2x - 3 = 3$.



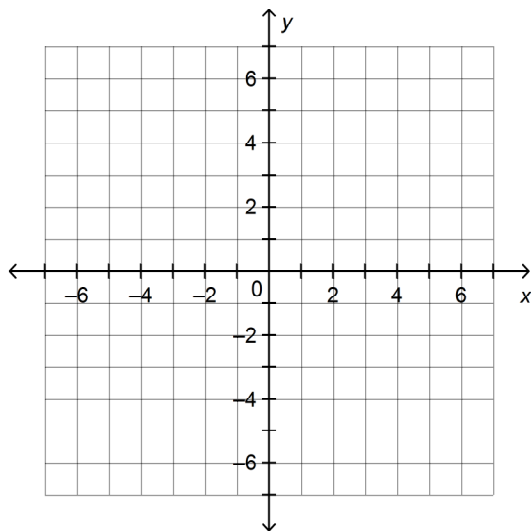
11. Graph the following lines on the same grid. Label the lines.

- i) $x + y = 4$
- ii) $x - y = -4$



12. Graph these equations on the same grid. What shape is formed by the lines?

- i) $x = -3$
- ii) $x - 5 = 0$
- iii) $y + 2 = 0$
- iv) $y - 5 = 0$



13. a) For each equation, make a table of values for the given values of x .

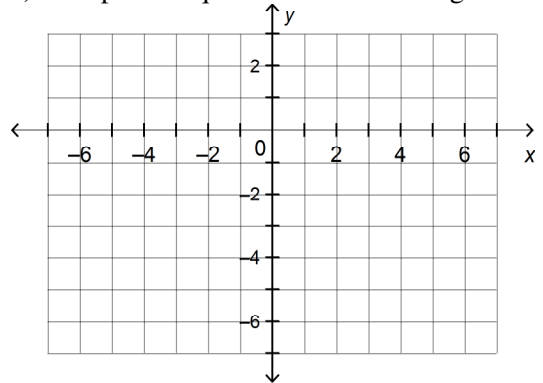
- i) $x + 2y = -4$; for $x = -6, 0,$ and 4

x	-6	0	4
y			

- ii) $x - 3y = 2$; for $x = -4, -1,$ and 5

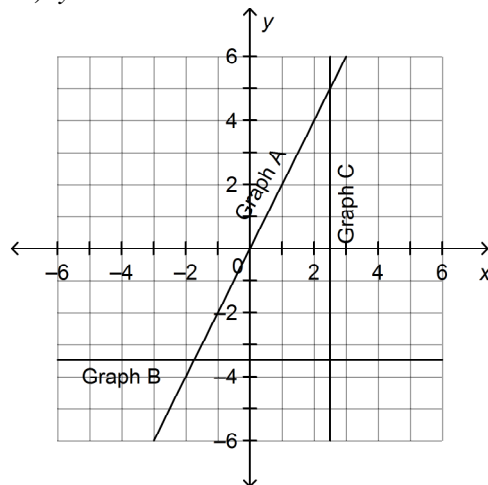
x	-4	-1	5
y			

b) Graph the equations on the same grid.



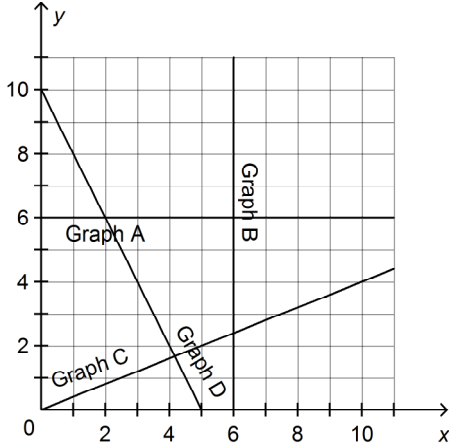
14. Match each equation with a graph on the grid below.

- i) $2x = 5$
- ii) $2y = -7$
- iii) $y = 2x$



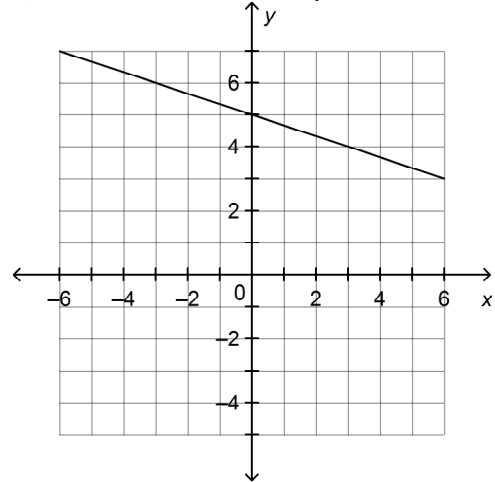
15. Match each equations with its graph below.

- i) $x - 6 = 0$
- ii) $y - 6 = 0$
- iii) $2x + y = 10$
- iv) $x - 2.5y = 0$



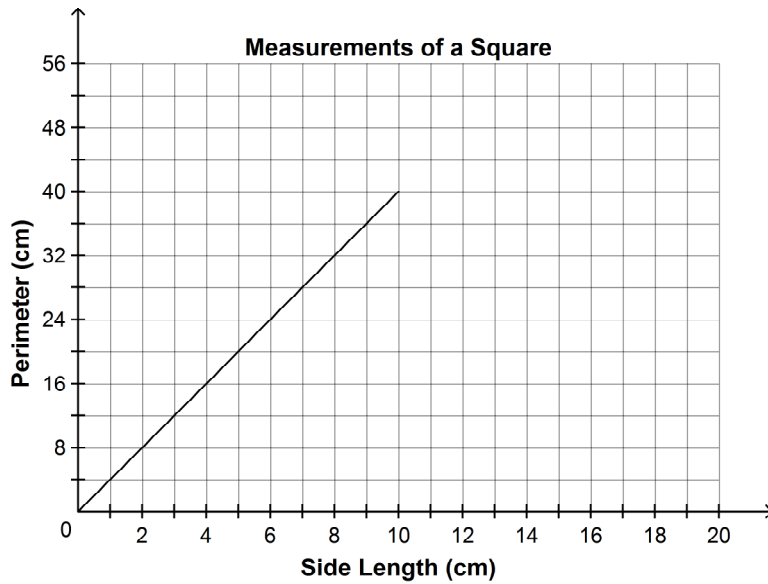
16. This graph represents a linear relation.

- a) Determine the value of x when $y = 3$.
- b) Estimate the value of y when $x = -2$.



17. This graph shows the relationship between the perimeter of a square and its side length.

- a) Determine the perimeter of a square with side length 7.5 cm.
- b) Determine the side length of a square with perimeter 46 cm.



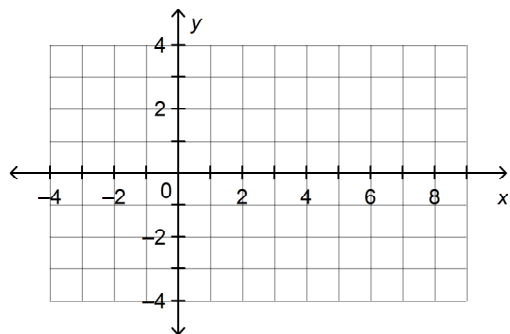
18. a) Graph the following lines on the same grid. What shape do they form?

i) $x + 3y = 9$

ii) $x - 3y = 9$

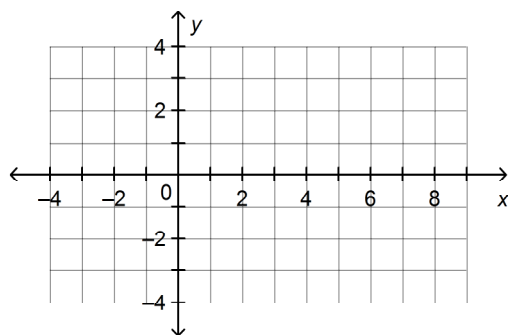
iii) $x + y = -3$

iv) $x - y = -3$



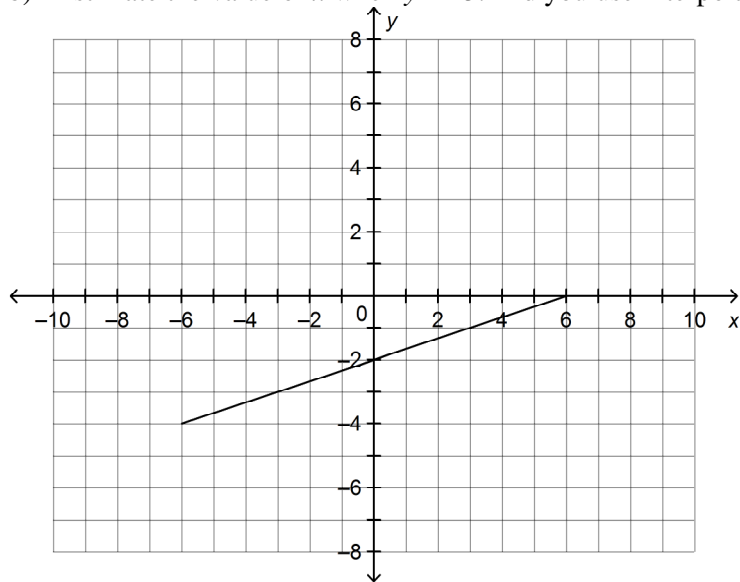
b) When Joan graphed the lines she made a mistake. Instead of graphing $x + y = -3$ and $x - y = -3$, she graphed $x + y = 3$ and $x - y = 3$.

What did Joan's graph look like?



19. This graph represents a linear relation.

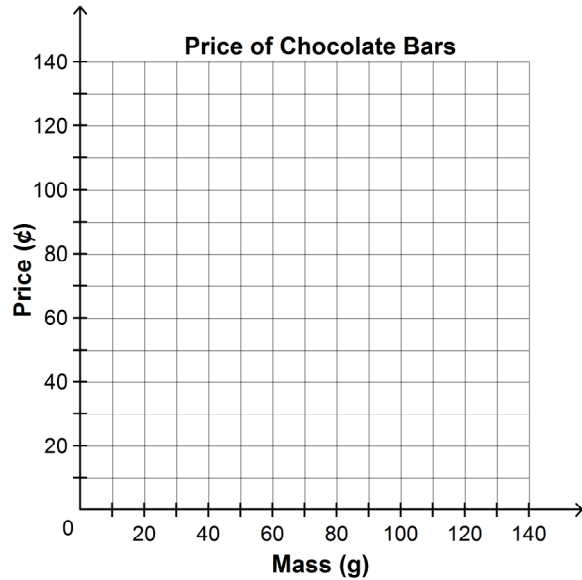
- Estimate the value of y when $x = 9$. Did you use interpolation or extrapolation to find the answer? Explain.
- Estimate the value of x when $y = -3$. Did you use interpolation or extrapolation to find the answer? Explain.



20. A local chocolate maker sells three different sizes of chocolate bars. The price of each chocolate bar is listed below. The chocolate maker plans to make two new sizes of chocolate bars. She wants the prices and sizes to be related to the chocolate bars she sells already.

Size (g)	45	55	65
Price (¢)	50	60	70

- a) Graph the data.



- b) What should the chocolate maker charge for a 130-g chocolate bar?
c) What should be the size of a chocolate bar that costs 95¢?

Final Review - Unit 4 Answer Section

SHORT ANSWER

1. ANS:

$$R = 76$$

DIF: Easy

2. ANS:

$$n = 6 + f$$

DIF: Moderate

3. ANS:

$$s = 50 - 4f$$

DIF: Moderate

4. ANS:

a) $F = 2.5 + 1.75n$

b) \$51.50

DIF: Moderate

5. ANS:

Graphs Q and R.

DIF: Easy

6. ANS:

ii and iv

DIF: Moderate

7. ANS:

a) ii

b) $y = 15 - 4x$

DIF: Moderate

8. ANS:

a)

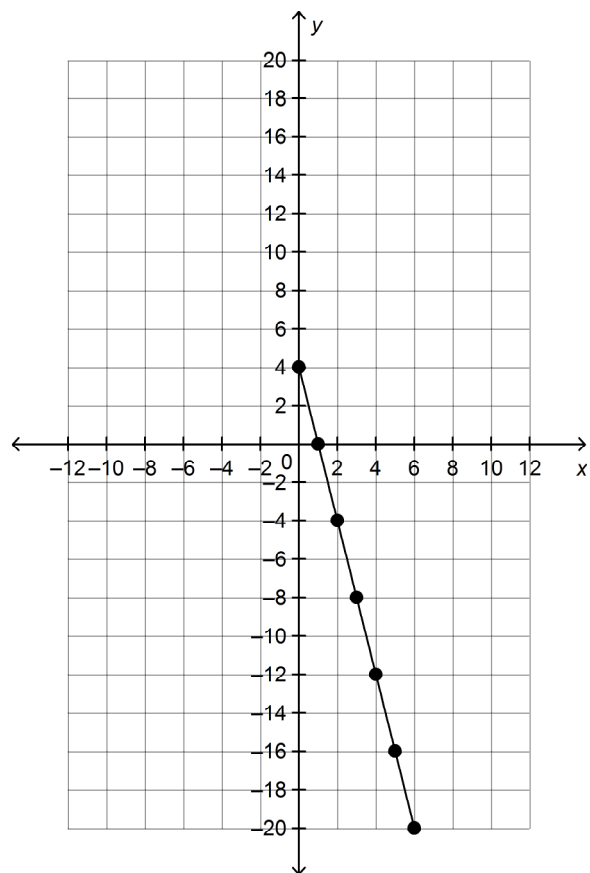
x	2	3	4	5	6
y	13	16	19	22	25

b) $y = 3x + 7$

DIF: Moderate

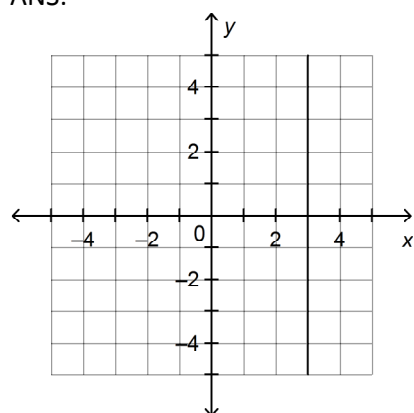
9. ANS:

x	0	1	2	3	4	5	6
y	4	0	-4	-8	-12	-16	-20



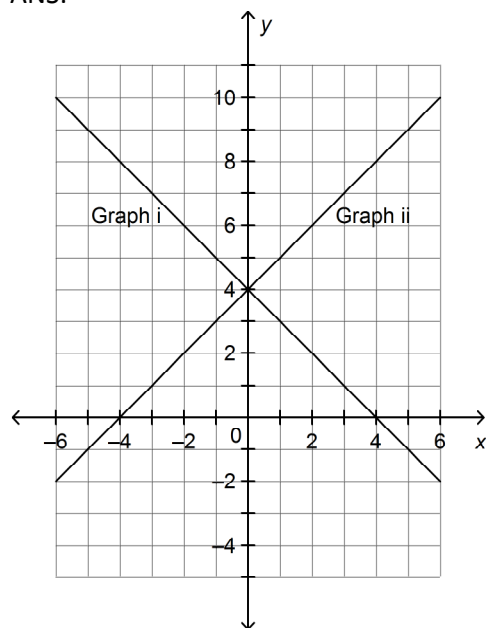
DIF: Moderate

10. ANS:



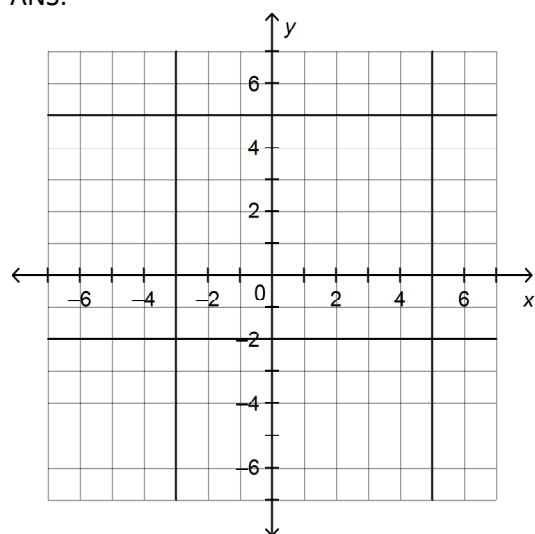
DIF: Easy

11. ANS:



DIF: Moderate

12. ANS:



The lines intersect to form a rectangle.

DIF: Moderate

13. ANS:

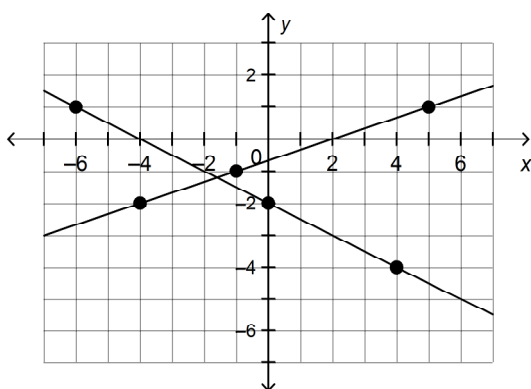
a)

x	-6	0	4
y	1	-2	-4

b)

x	-4	-1	5
y	-2	-1	1

c)



DIF: Moderate

14. ANS:

Graph A: $y = 2x$ Graph B: $2y = -7$ Graph C: $2x = 5$

DIF: Moderate

15. ANS:

Graph A: $y - 6 = 0$ Graph B: $x - 6 = 0$ Graph C: $x - 2.5y = 0$ Graph D: $2x + y = 10$

DIF: Moderate

16. ANS:

a) $x = 6$ b) $y = 5\frac{2}{3}$

DIF: Moderate

17. ANS:

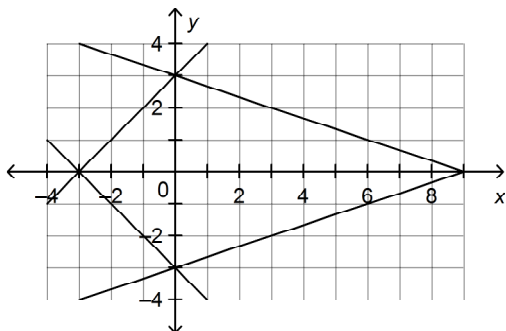
- a) 30 cm
- b) 11.5 cm

DIF: Moderate

PROBLEM

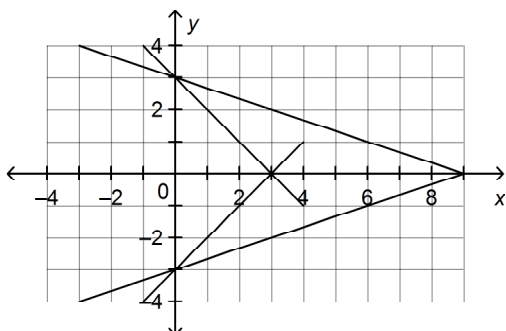
18. ANS:

a)



The lines intersect to form a kite/quadrilateral.

b)



DIF: Difficult

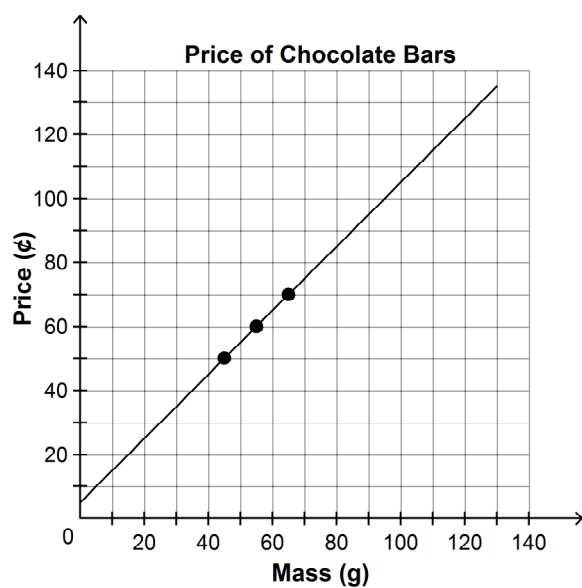
19. ANS:

- a) $y = 1$ when $x = 9$. I used extrapolation because I had to extend the graph to find the answer.
- b) $x = -3$ when $y = -3$. I used interpolation because the answer is between two data points on the graph.

DIF: Difficult

20. ANS:

a)



b) The chocolate maker should charge \$1.35 for a 130-g chocolate bar.

c) The size of a chocolate bar that costs 95¢ should be 90 g.

DIF: Difficult