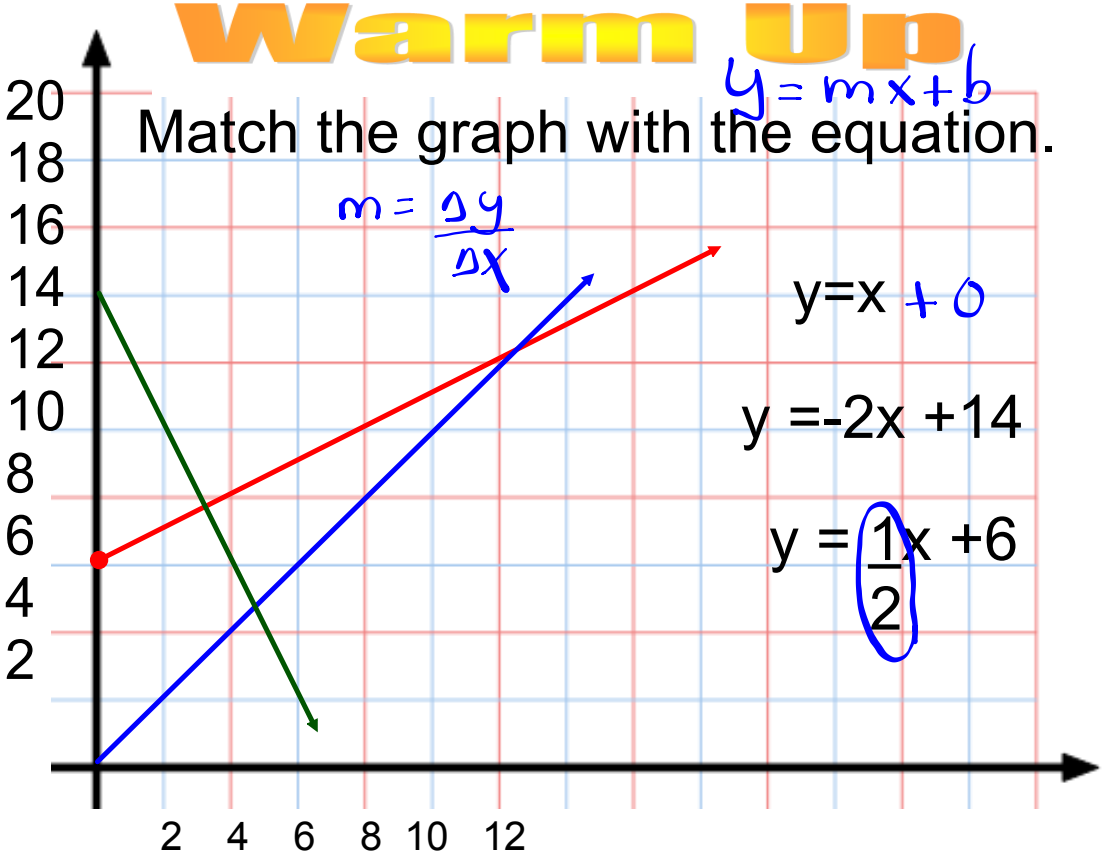
Warm Up

$y = mx + b$

Match the graph with the equation.

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



$y = x + 0$

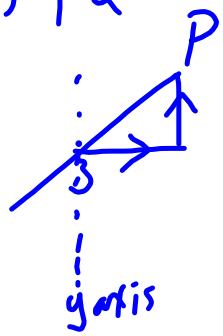
$y = -2x + 14$

$y = \frac{1}{2}x + 6$

Homework Questions??

Page 190

12. a) PQ



$y = mx + b$ (3)

$y = \frac{1}{2}x + 3$

b) QR $y = 0x + 1$

$y = 1$

c) RP $m = \frac{2}{-1}$

$y = mx + b$

$= \frac{-2}{1}x + 8$

$= -2x + 8$

Equation Sheet

1) $y = 3x - 5$

x	y
-1	-8
0	-5
1	-2

Graph (4)

2) $y = 2x - 4$

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

graph (6)

3) $y = -4x$

x	y
-1	4
0	0
1	-4

graph (1)

4) $y = -x + 1$

x	y
-1	2
0	1
1	0

graph (8)

5) $y = -4x - 3$

x	y
-1	1
0	-3
1	-8

graph (12)

6) $y = x$

x	y
-1	-1
0	0
1	1

graph (9)

7) $y = \frac{5}{3}x - 5$

x	y
-3	-10
0	-5
3	0

graph (11)

8) $y = \frac{1}{2}x + 1$

x	y
-2	0
0	1
2	2

graph (16)

9) $y = \frac{2}{5}x + 2$

x	y
-5	0
0	2
5	4

graph (5)

10) $y = \frac{1}{2}x - 2$

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

graph (7)

11) $y = x + 4$

x	y
-1	3
0	4
1	5

graph (3)

12) $y = \frac{5}{4}x + 5$

x	y
-4	0
0	5
4	10

graph (13)

13) $y = 2x - 1$

x	y
-1	-3
0	-1
1	1

graph (2)

14) $y = \frac{-1}{2}x + 2$

x	y
-2	3
0	2
2	1

graph (15)

15) $y = 5x + 4$

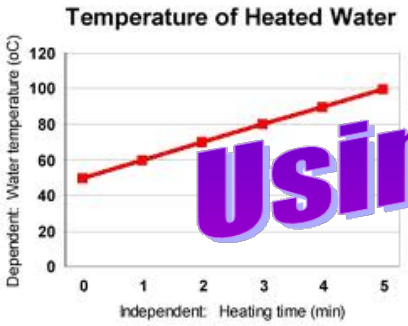
x	y
-1	-1
0	4
1	9

graph (10)

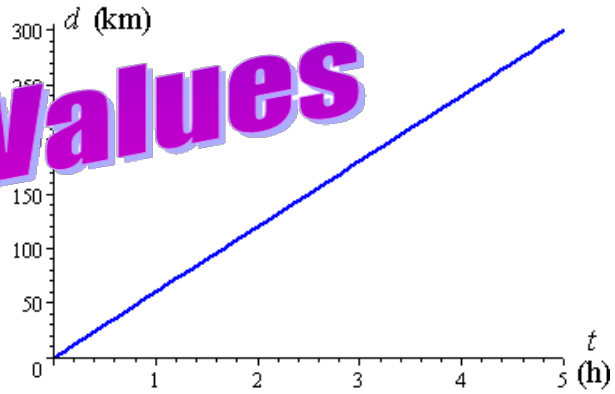
16) $y = \frac{-2}{5}x - 1$

x	y
-5	1
0	-1
1	-3

graph (14)



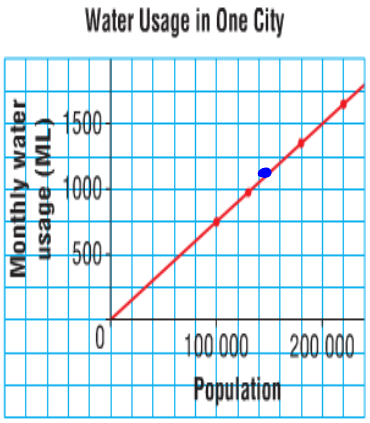
Using Graphs to Estimate Values



A city has grown over the past few years. This table and graph show how the volume of water used each month is related to the population.

Population	Monthly Water Usage (ML)
100 000	750
130 000	975
180 000	1350
220 000	1650

1 ML is 1 000 000 L.



a) Estimate the monthly water usage for a population of 150 000 people.

1125 ML

b) Predict the water usage for 250 000 people.

1875 ML

a) A city has grown over the past few years. This table and graph show how the volume of water used each month is related to the population.

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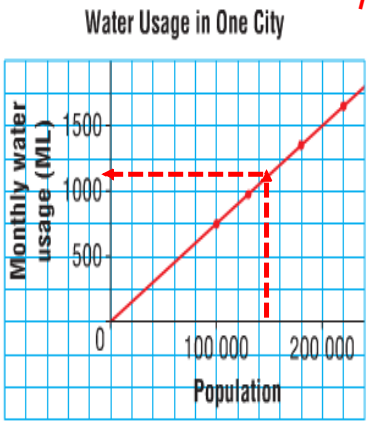

Estimate the monthly water usage for a population of 150 000 people.

Interpolation... ***estimate values that lie between two data points***

b)

A city has grown over the past few years. This table and graph show how the volume of water used each month is related to the population.

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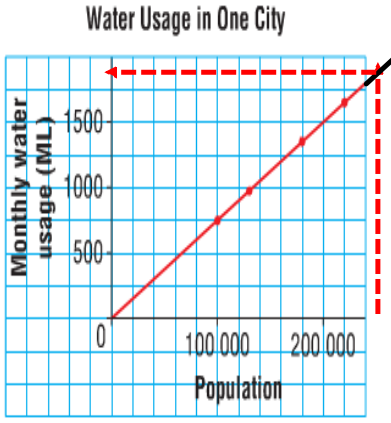
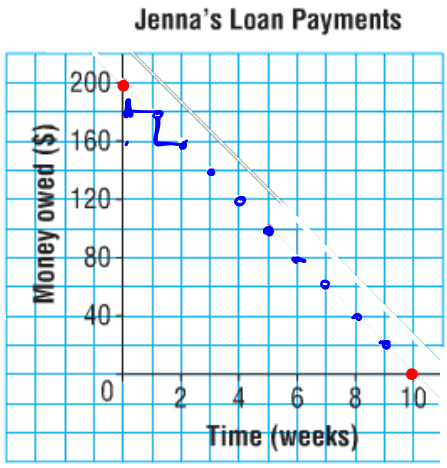


Predict the water usage for 250 000 people.

Use a ruler to extend the line.

Extrapolation... ***estimate values that lie outside the given data points***

Jenna borrows money from her parents for a school trip. She repays the loan by making regular weekly payments. The graph shows how the money is repaid over time. The data are discrete because payments are made every week.

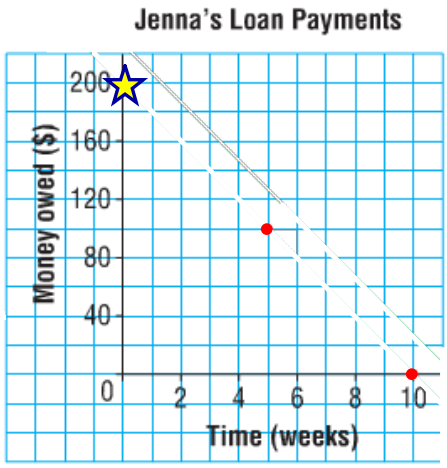


a) How much money did Jenna originally borrow? $200

b) How much money does she still owe after 3 weeks? $140

c) How many weeks will it take Jenna to repay one-half of the money she borrowed? 5 wks

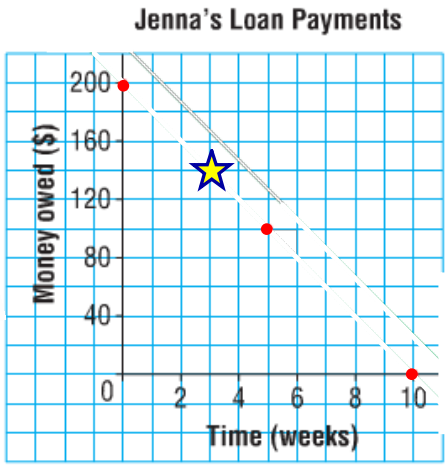
Jenna borrows money from her parents for a school trip. She repays the loan by making regular weekly payments. The graph shows how the money is repaid over time. The data are discrete because payments are made every week.



a) How much money did Jenna originally borrow?

Jenna borrowed $200.

Jenna borrows money from her parents for a school trip. She repays the loan by making regular weekly payments. The graph shows how the money is repaid over time. The data are discrete because payments are made every week.

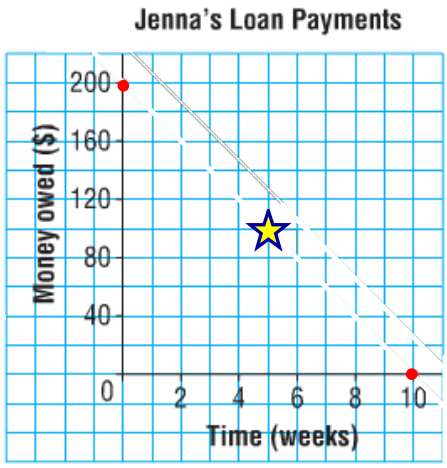


b) How much money does she still owe after 3 weeks?

Jenna owes $140 after 3 weeks.

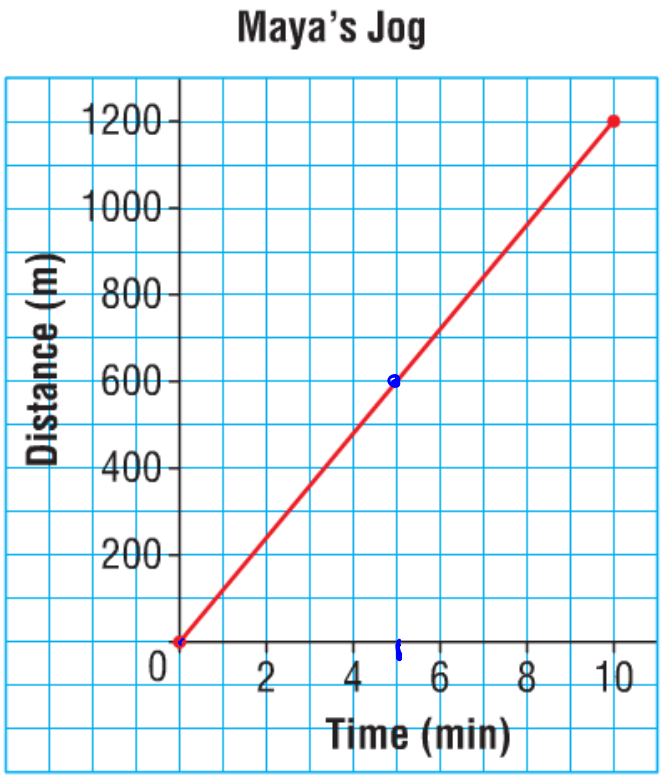
$

Jenna borrows money from her parents for a school trip. She repays the loan by making regular weekly payments. The graph shows how the money is repaid over time. The data are discrete because payments are made every week.



c) How many weeks will it take Jenna to repay one-half of the money she borrowed?

It will take Jenna 5 weeks to pay one-half of them money back.



$y = mx + b$

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

$y = \frac{600}{5}x + 0$

$y = 120x$

Use the graph.

a) Predict how long it will take Maya to jog 2000 m.

b) Predict how far Maya will jog in 14 min.

c) What assumption did you make?

You must use extrapolation. :)

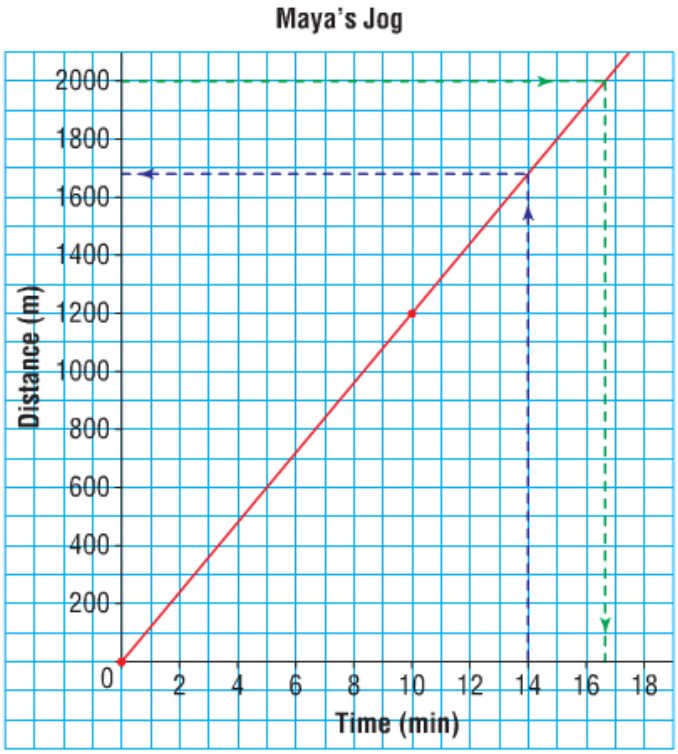
b) $y = 120x$

$= 120(14)$

$= 1680\text{m}$

a) $\frac{2000}{120} = \frac{120x}{120}$

$50 = x$ or $x = 16.\overline{6}$ min



Use the graph.

a) Predict how long it will take Maya to jog 2000 m.

b) Predict how far Maya will jog in 14 min.

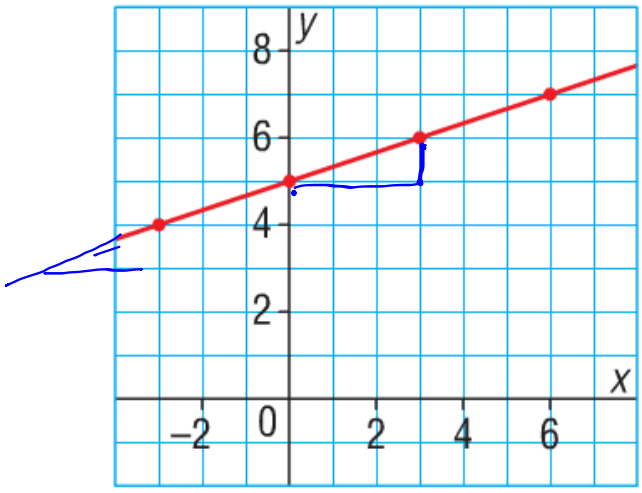
c) What assumption did you make?

Answers:

a) It will take Maya about 16.5 minutes to jog 2000m.

b) Maya will jog about 1690m in 14 minutes.

Which questions can be answered using interpolation?



Determine the values of y for each of the following values of x.

a) x = -3 4
b) x = 6 7
c) x = -4 3.5

Determine the values of x for each of the following values of y.

a) y = 3 -6
b) y = 7 6
c) y = 2 -9

Which questions will have to be answered using extrapolation?

$y = \frac{1}{3}x + 5$

$3 = \frac{1}{3}x + 5$

$3 \cdot 5 = \frac{1}{3}x$

$(3) -2 = \frac{1}{3}x\,(3)$

$-6 = x$

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

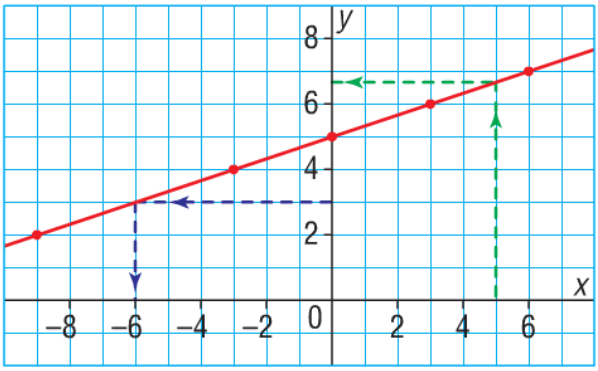
m

$2 = \frac{1}{3}x + 5$ (−5 −5)

$2 - 5 = \frac{1}{3}x$

$(3) -3 = \frac{x}{3}(3)$

$-9 = x$



Determine the values of y for each of the following values of x.

a) x = -3
b) x = 6
c) x = -4

Determine the values of x for each of the following values of y.

a) y = 3
b) y = 7
c) y = 2

Class / Homework

Pages 196 - 198
4 - 14