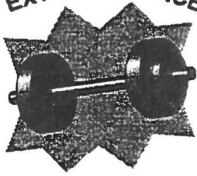


EXTRA PRACTICE



Objective 8.1 To solve a system of linear relations graphically.

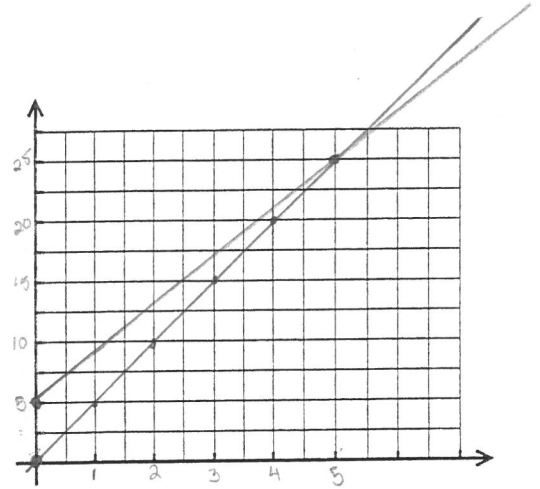
Chapter 3

1. Caroline can choose between babysitting Sylvia's children at an hourly rate of \$5 or babysitting Lucy's children. Lucy pays her \$4 for her travel expenses plus \$4 per hour. Draw a graph to show how many hours that Caroline would have to babysit to have the same income.

Sylvia
 $y = 5x$

Lucy
 $y = 4x + 4$

$(5, 25)$

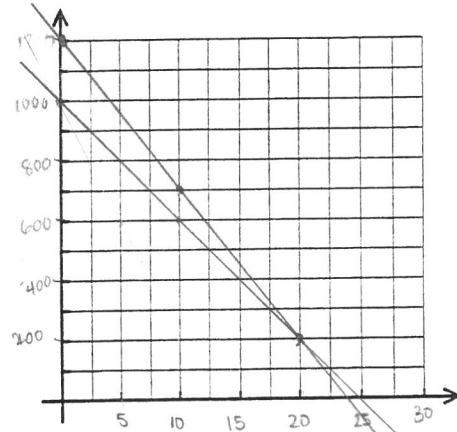


2. Swimming pool A, containing 1200 L of water, is emptied at the rate of 50 L per minute. Swimming Pool B, containing 1000 L of water, is emptied at the rate of 40 L per minute. Show graphically, how many minutes it would take for both pools to contain the same amount of water.

$y_A = 1200 - 50x$

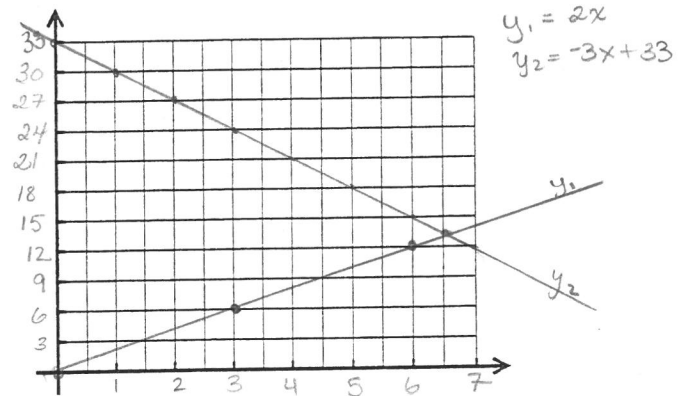
$y = 1000 - 40x$

$(20, 200)$



3. Two relations are represented by the following table of values.

x	Y_1	Y_2
1	2	30
2	4	27
3	6	24
4	8	21
5	10	18
6	12	15
7	14	12



- a) On a graph, plot the points associated with each relation.
 b) Draw two lines to represent the relations.
 c) Estimate the solution. $(6.6, 13.2)$

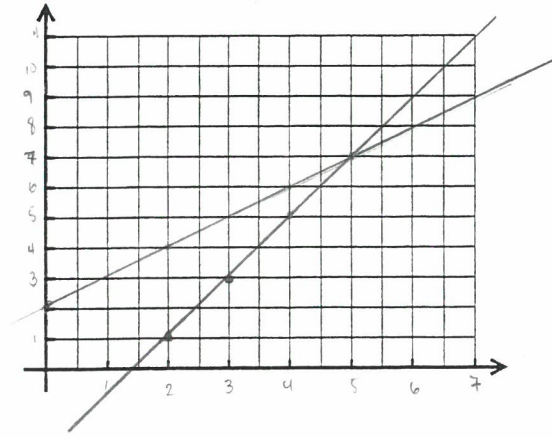
4. Given the following system of linear relations:

$$Y_1 = 2x - 3$$

$$Y_2 = x + 2$$

Solve this system graphically.

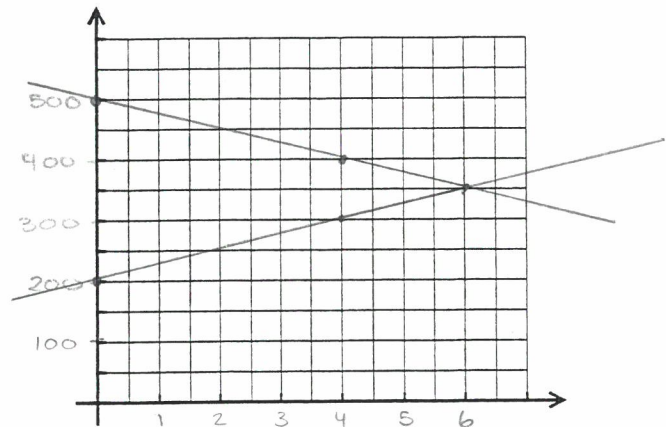
$$(5, 7)$$



5. Mark and Nancy have \$200 and \$500, respectively, in their bank accounts. Each month Nancy withdraws \$25 while Mark deposits \$25. In how many months will they have equivalent sums in the bank? Solve this problem graphically.

Mark	Nancy
$y = 200 + 25x$	$y = 500 - 25x$
$(6, 450)$	

Ans: 6 months.



6. One linear relation has an initial value of 14 and a rate of variation of 5 for the values of x less than or equal to 8. For x greater than 8, the rate of variation is 4. A second linear relation has a rate of variation of 6 and an initial value of 0. Solve the system graphically.

$$\text{line 1} \begin{cases} y = 5x + 14 & x = [0, 8[\\ y = 4x & x = [8, \infty[\end{cases}$$

$$\text{line 2} \begin{cases} y = 6x \end{cases}$$

