

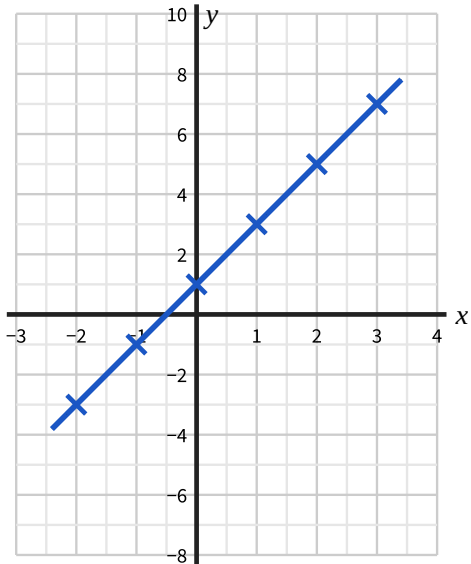
# Plotting Straight-Line Graphs

ANSWERS

1

(a) Complete the table of values for  $y = 2x + 1$ . (b) Draw the graph of  $y = 2x + 1$  for values of  $x$  from  $-2$  to  $3$ .

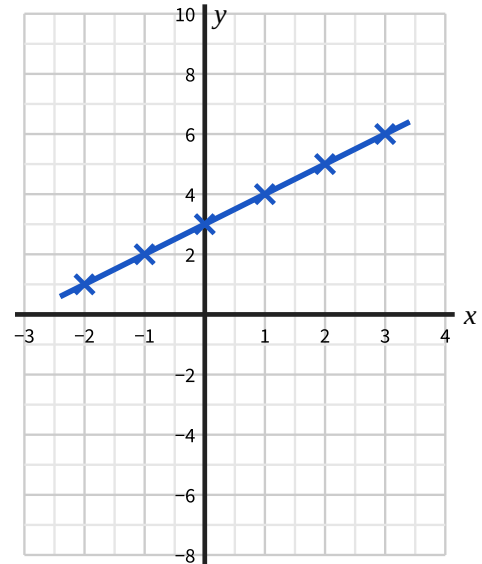
| x | -2 | -1 | 0 | 1 | 2 | 3 |
|---|----|----|---|---|---|---|
| y | -3 | -1 | 1 | 3 | 5 | 7 |



2

(a) Complete the table of values for  $y = x + 3$ . (b) Draw the graph of  $y = x + 3$  for values of  $x$  from  $-2$  to  $3$ .

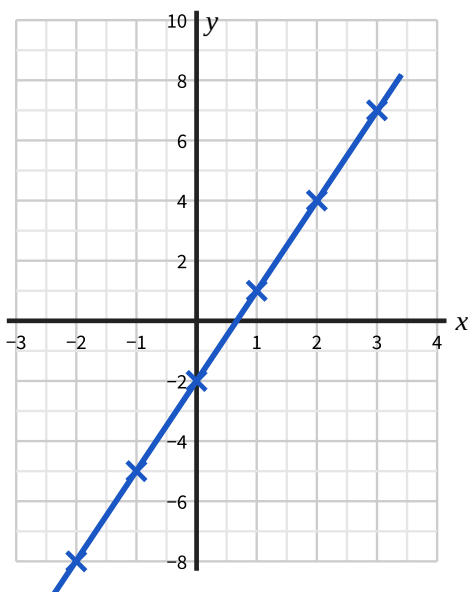
| x | -2 | -1 | 0 | 1 | 2 | 3 |
|---|----|----|---|---|---|---|
| y | 1  | 2  | 3 | 4 | 5 | 6 |



3

(a) Complete the table of values for  $y = 3x - 2$ . (b) Draw the graph of  $y = 3x - 2$  for values of  $x$  from  $-2$  to  $3$ .

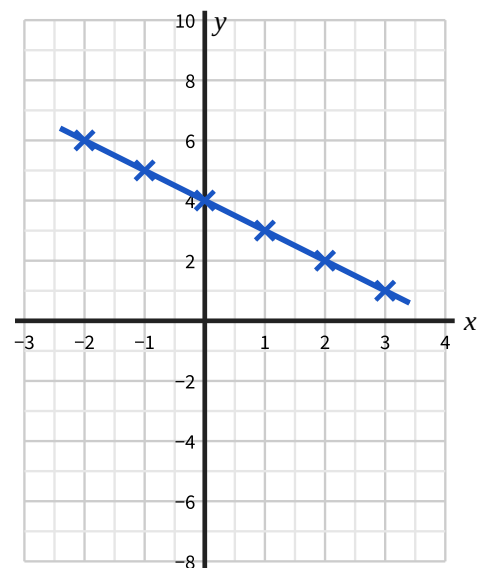
| x | -2 | -1 | 0  | 1 | 2 | 3 |
|---|----|----|----|---|---|---|
| y | -8 | -5 | -2 | 1 | 4 | 7 |



4

(a) Complete the table of values for  $y = 4 - x$ . (b) Draw the graph of  $y = 4 - x$  for values of  $x$  from  $-2$  to  $3$ .

| x | -2 | -1 | 0 | 1 | 2 | 3 |
|---|----|----|---|---|---|---|
| y | 6  | 5  | 4 | 3 | 2 | 1 |



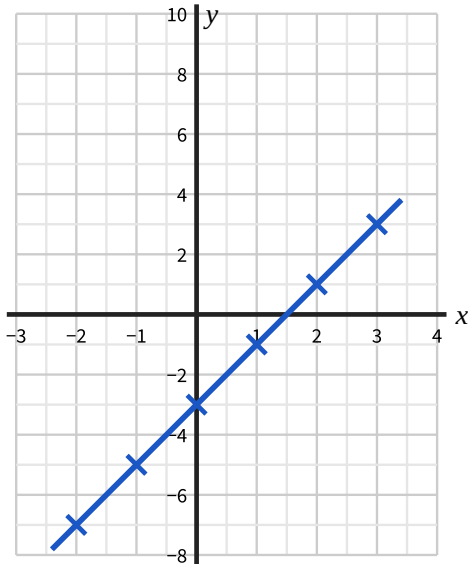
# Plotting Straight-Line Graphs

ANSWERS

5

(a) Complete the table of values for  $y = 2x - 3$ . (b) Draw the graph of  $y = 2x - 3$  for values of  $x$  from  $-2$  to  $3$ .

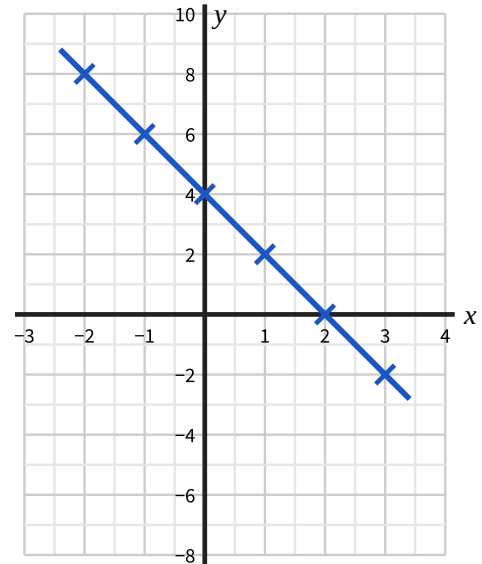
| x | -2 | -1 | 0  | 1  | 2 | 3 |
|---|----|----|----|----|---|---|
| y | -7 | -5 | -3 | -1 | 1 | 3 |



6

(a) Complete the table of values for  $y = 4 - 2x$ . (b) Draw the graph of  $y = 4 - 2x$  for values of  $x$  from  $-2$  to  $3$ .

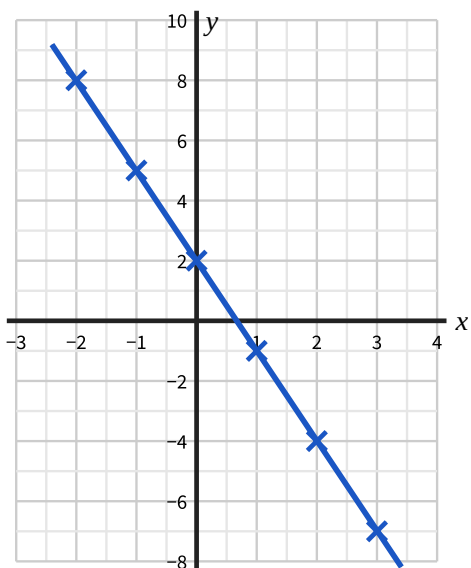
| x | -2 | -1 | 0 | 1 | 2 | 3  |
|---|----|----|---|---|---|----|
| y | 8  | 6  | 4 | 2 | 0 | -2 |



7

(a) Complete the table of values for  $y = -3x + 2$ . (b) Draw the graph of  $y = -3x + 2$  for values of  $x$  from  $-2$  to  $3$ .

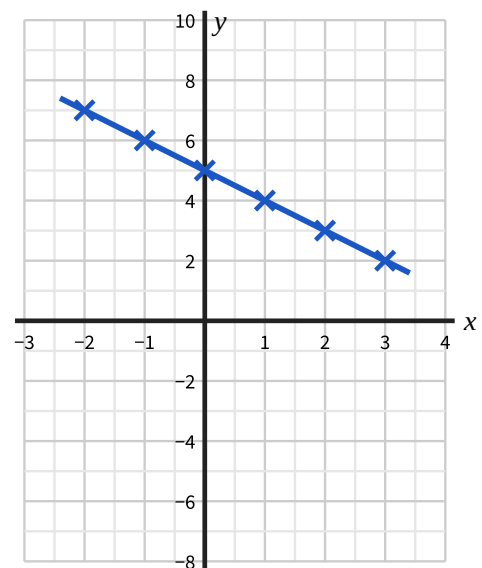
| x | -2 | -1 | 0 | 1  | 2  | 3  |
|---|----|----|---|----|----|----|
| y | 8  | 5  | 2 | -1 | -4 | -7 |



8

(a) Complete the table of values for  $y = 5 - x$ . (b) Draw the graph of  $y = 5 - x$  for values of  $x$  from  $-2$  to  $3$ .

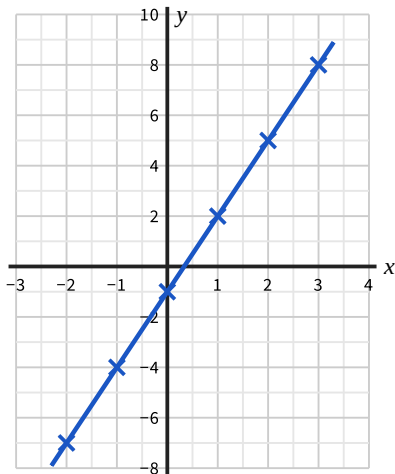
| x | -2 | -1 | 0 | 1 | 2 | 3 |
|---|----|----|---|---|---|---|
| y | 7  | 6  | 5 | 4 | 3 | 2 |



9

Draw the graph of  $y = 3x - 1$  for values of  $x$  from  $-2$  to  $3$ .

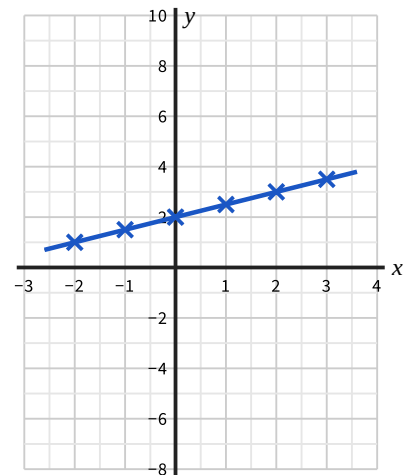
| x | -2 | -1 | 0  | 1 | 2 | 3 |
|---|----|----|----|---|---|---|
| y | -7 | -4 | -1 | 2 | 5 | 8 |



10

Complete the table of values for  $y = \frac{1}{2}x + 2$ .  
Then draw the graph.

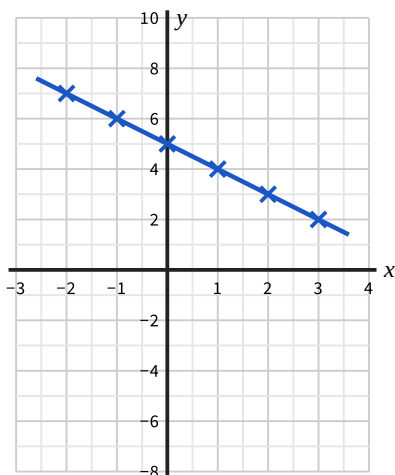
| x | -2 | -1  | 0 | 1   | 2 | 3   |
|---|----|-----|---|-----|---|-----|
| y | 1  | 1.5 | 2 | 2.5 | 3 | 3.5 |



11

Complete the table of values for  $x + y = 5$ .  
Then draw the graph.

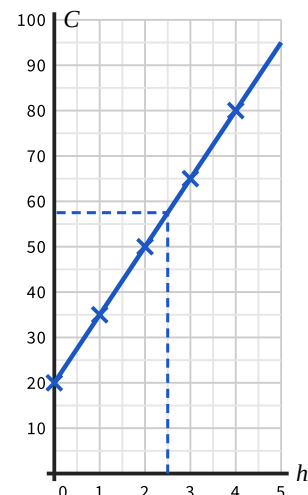
| x | -2 | -1 | 0 | 1 | 2 | 3 |
|---|----|----|---|---|---|---|
| y | 7  | 6  | 5 | 4 | 3 | 2 |



12

A plumber charges £20 to come out plus £15 for each hour, so  $C = 15h + 20$ , where  $C$  is the cost in pounds for  $h$  hours.  
Complete the table and draw the graph. Use it to find the cost of a job that takes  $2\frac{1}{2}$  hours.

| h | 0  | 1  | 2  | 3  | 4  |
|---|----|----|----|----|----|
| C | 20 | 35 | 50 | 65 | 80 |

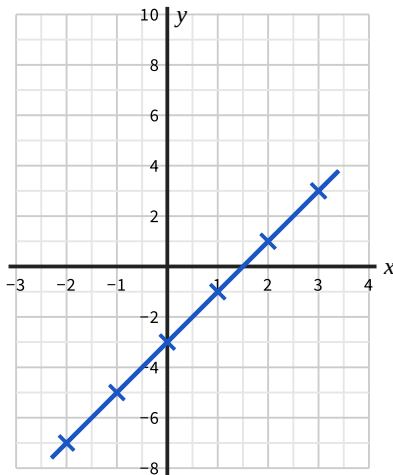


Cost about £57.50 (accept £56 to £59)

13

Draw the graph of  $y = 2x - 3$  for values of  $x$  from  $-2$  to  $3$ .  
Use your graph to find where the line crosses the  $x$  axis.

| $x$ | -2 | -1 | 0  | 1  | 2 | 3 |
|-----|----|----|----|----|---|---|
| $y$ | -7 | -5 | -3 | -1 | 1 | 3 |

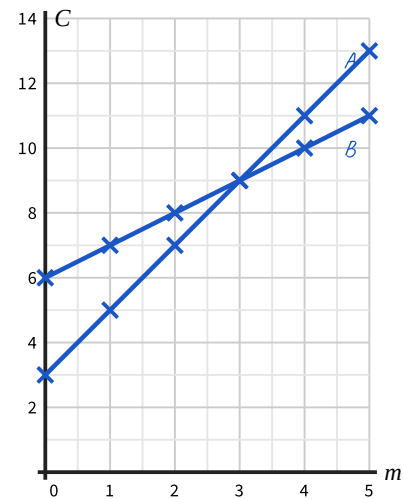


$x =$  1.5 (accept 1.4 to 1.6)

14

Taxi firm A charges £ $C$ , where  $C = 2m + 3$  and firm B charges £ $C$ , where  $C = m + 6$ , for  $m$  miles. Draw both graphs.  
For what distance do they charge the same?

| $m$ | 0 | 1 | 2 | 3 | 4  | 5  |
|-----|---|---|---|---|----|----|
| A   | 3 | 5 | 7 | 9 | 11 | 13 |
| B   | 6 | 7 | 8 | 9 | 10 | 11 |

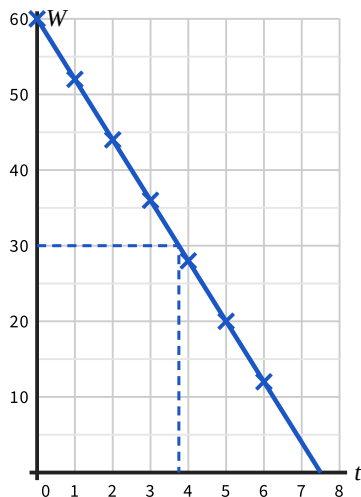


Distance 3 miles (both £9)

15

A tank holds 60 litres of water. It empties at 8 litres a minute, so  $W = 60 - 8t$ , where  $W$  is the water left after  $t$  minutes. Draw the graph. When is the tank half full?

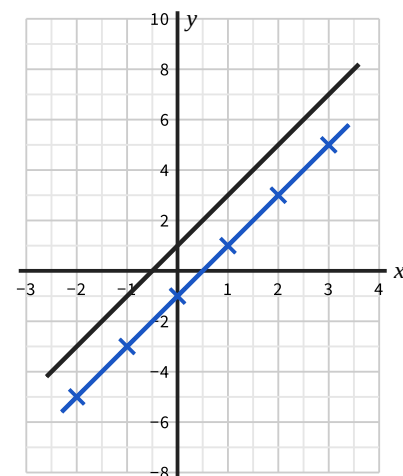
| $t$ | 0  | 1  | 2  | 3  | 4  | 5  | 6  |
|-----|----|----|----|----|----|----|----|
| $W$ | 60 | 52 | 44 | 36 | 28 | 20 | 12 |



Time about 3¾ minutes (accept 3.6 to 3.9)

16

Sam drew this line for  $y = 2x - 1$ . He has made a mistake. Explain what is wrong, and draw the correct line.



When  $x = 0$ ,  $y$  should be  $-1$ , but Sam's line goes through  $(0, 1)$ . He drew  $y = 2x + 1$ .