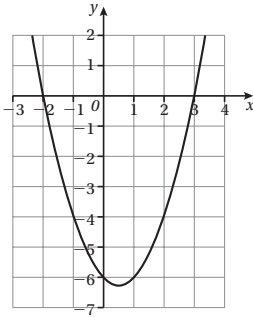


Chapter review 14

- 1 Solve for x .
- a $6x - 2 = 4(2x - 3)$ b $x^2 = 15 - 2x$
 c $4(x - 3) = 3(x + 12)$ d $-x^2 = 8x + 12$
 e $(x + 3)^2 = 49$ f $(x + 5)(x + 2) = 10$
- 2 Study this graph.



- a What are the roots of the quadratic equation modelled by this graph?
 b What is the equation of this graph?

- 3 Frank thinks that $y = 2x + 4$ is equivalent to $y = 4x + 8$.
 Is he correct? Explain your answer.
- 4 Explain why the equations $2x + y = 6$ and $2x + y = 8$ are not simultaneous equations.
- 5 If you drew the graph of $y = x^2 + 2x$, where would the curve cut the x -axis?
- 6 The sum of two numbers is 20 and their difference is 6.
- a Write a set of equations in terms of x and y to show this.
 b Solve the equations simultaneously to find the two numbers.

15 Functions and sequences

Section 1: Sequences and patterns

HOMEWORK 15A

- 1 Find the next three terms in each sequence and describe the rule you used to find them.
- a 11, 13, 15 ... b 88, 99, 110 ...
 c 12, 16, 20, 24 ... d 8, 16, 24 ...
 e -2, -4, -6, -8 ... f $\frac{1}{4}, \frac{1}{2}, 1, \dots$
 g 1, 2, 4, 7 ... h 1, 6, 11, 16 ...
- 2 List the first four terms of the sequences that follow these rules.
- a Start with seven and add two each time.
 b Start with 37 and subtract five each time.
 c Start with one and multiply by $\frac{1}{2}$ each time.
 d Start with five then multiply by two and add one each time.
 e Start with 100, divide by two and subtract three each time.



Tip

Look at how the numbers change each time. Is the change the same?

- 3 Josh skims a stone across a pond.
- Each 'bounce' is $\frac{2}{3}$ the length of the previous one.
- a If the first bounce is 216 cm, how long will the fourth bounce be?
 b How many times will the stone bounce before the bounce is less than 1 cm?