

15 Factorise.

(a) $x^2 - 7x + 12$

..... [2]

(b) $5x + 10y + 6ny + 3nx$

..... [2]

16 The table shows three sequences.

	1st term	2nd term	3rd term	4th term	5th term	<i>n</i> th term
Sequence <i>A</i>	8	13	18	23	28	
Sequence <i>B</i>	$\frac{3}{2}$	$\frac{4}{3}$	$\frac{5}{4}$	$\frac{6}{5}$	$\frac{7}{6}$	
Sequence <i>C</i>	$\frac{1}{4}$	$\frac{1}{2}$	1	2	4	

Complete the table to show the *n*th term of each sequence.

[5]

17 Expand and simplify.

$(x - 2)(2x + 3)(x + 4)$

..... [3]

14 These expressions are all equal in value.

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

$10-x$

$y+11$

Find the value of y .

15 The population of a town is 54 000.
The population is **decreasing** exponentially at a rate of 2% per year.

(a) Calculate the decrease in the population at the end of 4 years.

$y =$

.....

[5]

.....

[3]

(b) Find the number of complete years it takes for the population of 54 000 to first fall below 44 000.

..... years

[2]

16 Expand and simplify.

(a) $7(x+2)+4(3x-5)$

(b) $(3x-y)(5x+2y)$

.....

[2]

.....

[2]

17 Make t the subject of the formula.

$x = \frac{7t}{5-t}$

$t =$

.....

[3]

6 Solve.

(a) $8x + 7 = 39$

$x = \dots\dots\dots$ [2]

(b) $2(5y - 1) = 24$

$y = \dots\dots\dots$ [3]

6 Expand.

$5x^2(3x - 2)$

$\dots\dots\dots$ [2]