

2018-2019 MATHS: REVISION AND EXERCISES

1. Algebraic Equations

Factorise each of the following

$x^2 + 5x + 6$	$x^2 - 9$
$x^2 - 4$	$x^2 + 7x + 12$
$x^2 + 11x + 28$	$x^2 - 16$
$x^2 - 10x + 25$	$x^2 + 13x + 42$
$x^2 + 15x + 50$	$x^2 - 25$
$x^2 - 8x + 16$	$x^2 + 17x + 72$

2. Expand the second set of brackets in each equation.

$(x+2)(x+3)$	$(x-4)(x-5)$
$(x+5)(x+6)$	$(x-7)(x-8)$
$(x+8)(x+9)$	$(x-9)(x-10)$

3. Expand, simplify, combine like terms. The answer should be a quadratic in standard form. Write in your book.

4. Simplify algebraically

a.  $(x+2)(x+3) - (x+1)(x+4)$

b.  $(x^2 + 5x + 6) - (x^2 + 3x + 2)$

c.  $(x+2)(x+3) + (x+1)(x+4)$

d.  $(x^2 + 5x + 6) + (x^2 + 3x + 2)$

e.  $(x+2)(x+3) - (x+1)(x+4)$

f.  $(x^2 + 5x + 6) - (x^2 + 3x + 2)$

5. Complete

1.  $x^2 + 5x + 6 = (x+2)(x+3)$
2.  $x^2 - 4 = (x+2)(x-2)$
3.  $x^2 + 7x + 12 = (x+3)(x+4)$
4.  $x^2 - 16 = (x+4)(x-4)$
5.  $x^2 + 11x + 28 = (x+4)(x+7)$
6.  $x^2 - 10x + 25 = (x-5)(x-5)$
7.  $x^2 + 15x + 50 = (x+5)(x+10)$
8.  $x^2 - 8x + 16 = (x-4)(x-4)$
9.  $x^2 + 17x + 72 = (x+8)(x+9)$
10.  $x^2 - 25 = (x+5)(x-5)$

6. Expand

1.  $(x+2)(x+3) = x^2 + 5x + 6$
2.  $(x-4)(x-5) = x^2 - 9x + 20$
3.  $(x+5)(x+6) = x^2 + 11x + 30$
4.  $(x-7)(x-8) = x^2 - 15x + 56$
5.  $(x+8)(x+9) = x^2 + 17x + 72$
6.  $(x-9)(x-10) = x^2 - 19x + 90$

7. Simplify each of these algebraically

8. Complete

1.  $(x+2)(x+3) = x^2 + 5x + 6$
2.  $(x-4)(x-5) = x^2 - 9x + 20$
3.  $(x+5)(x+6) = x^2 + 11x + 30$
4.  $(x-7)(x-8) = x^2 - 15x + 56$
5.  $(x+8)(x+9) = x^2 + 17x + 72$
6.  $(x-9)(x-10) = x^2 - 19x + 90$

9. Factorise

10. Factorise each of these algebraically

1.  $x^2 + 5x + 6 = (x+2)(x+3)$
2.  $x^2 - 4 = (x+2)(x-2)$
3.  $x^2 + 7x + 12 = (x+3)(x+4)$
4.  $x^2 - 16 = (x+4)(x-4)$
5.  $x^2 + 11x + 28 = (x+4)(x+7)$
6.  $x^2 - 10x + 25 = (x-5)(x-5)$
7.  $x^2 + 15x + 50 = (x+5)(x+10)$
8.  $x^2 - 8x + 16 = (x-4)(x-4)$
9.  $x^2 + 17x + 72 = (x+8)(x+9)$
10.  $x^2 - 25 = (x+5)(x-5)$