

(C1-2.1) Name:

Homework Questions 1 – Plotting Quadratic Equations

1. Plot the following quadratic equations on graph paper (take the values of x from 4 to -4)

a) $y = (x + 2)^2$

b) $y = -x^2$

c) $y = x^2 + 3$

d) $y = -x^2 - 2$

e) $y = x^2 - x - 6$

2. State the minimum value of y for each of the graphs drawn above and the value of x at this point.

a) $y = (x + 2)^2$

b) $y = -x^2$

c) $y = x^2 + 3$

d) $y = -x^2 - 2$

e) $y = x^2 - x - 6$

3. State the line of symmetry for each of the graphs drawn above

a) $y = (x + 2)^2$

b) $y = -x^2$

c) $y = x^2 + 3$

d) $y = -x^2 - 2$

e) $y = x^2 - x - 6$

(C2-2.2) Name:

Homework Questions 2 – Solving Quadratic Equations

Solve the following quadratic equations

1. $(x + 2)(x + 4) = 0$

2. $(x - 5)(x - 6) = 0$

3. $(x - 7)(x - 4) = 0$

4. $x(x + 7) = 0$

5. $(2x + 3)(x - 8) = 0$

6. $(5x - 3)(x + 5) = 0$

Solve the following quadratic equations by factorizing first

7. $x^2 - 7x + 12 = 0$

8. $x^2 + 5x - 6 = 0$

9. $x^2 - 2x - 15 = 0$

10. $x^2 + 5x - 24 = 0$

11. $x^2 + 11x + 30 = 0$

12. $x^2 = 88 - 3x$

13. $x^2 = 6x - 8$

$$x =$$

14. $7x = x^2 - 30$

$$x =$$

15. $2x^2 - 3 = x$

$$x =$$

16. $4x^2 - 29x + 7 = 0$

$$x =$$

17. $4x^2 = x$

$$x =$$

Solve these equations, leave your answer in surd form if necessary

18. $(3x - 2)^2 = 36$

$$x =$$

19. $3x^2 = 27$

$$x =$$

20. $(x - 4)^2 = 8$

$$x =$$

(C2-2.3) Name:

Homework Questions 3– Completing the Square

Complete the square for these expressions

1. $x^2 - 6x + 8$

2. $x^2 - 4x + 9$

3. $x^2 - 10x - 5$

4. $x^2 + 12x + 6$

5. $x^2 - 8x + 7$

6. $x^2 - 10x - 2$

7. $x^2 + 18x - 3$

8. $x^2 + 4x + 6$

9. $x^2 + 10x + 2$

10. $x^2 + 18x - 1$

(C2-2.4) Name:

Homework Questions 4 – Solving Equations by Completing the Square

Solve the following quadratic equations by completing the square

1. $x^2 + 4x - 7 = 0$

2. $x^2 + 12x + 9 = 0$

3. $x^2 - 6x + 3 = 0$

4. $x^2 - 8x - 2 = 0$

5. $x^2 - x - 3 = 0$

6. $x^2 - 15x + 8 = 0$

7. $x^2 - 17x - 18 = 0$

8. $2x^2 + 4x - 3 = 0$

9. $5x^2 - 8x + 2 = 0$

10. $10x^2 + 3x - 2 = 0$

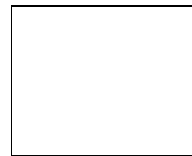
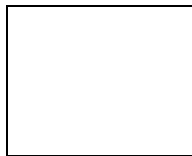
(C1-2.5) Name:

Homework Questions 5 – Quadratic Formula

Solve the following quadratic equations using the quadratic formula $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ leave your answer in surd form.

1. $x^2 + 5x - 17 = 0$

2. $7x^2 - x - 4 = 0$



3. $2x^2 + 4x - 4 = 0$

4. $5x^2 = x + 2$



5. $3x^2 + 4x = 6$



(C1-2.6) Name:

Homework Questions 6 – Sketching Graphs and using the Discriminant

Calculate the value of the Discriminant and hence state the number of real roots

1. $x^2 + 7x + 3 = 0$

2. $x^2 + x + 7 = 0$

3. $3x^2 - 2x - 1 = 0$

4. $x^2 - 20x + 100 = 0$

5. $4x^2 + 5x - 2 = 0$

6. $x^2 = -11x - 3$

7. For what values of P will the roots of $px^2 - 2x + 5 = 0$ be real?

8. Find the range of values for q for which the equation $2x^2 - 8x - q = 0$ has 2 real roots?

9. For what values of y will the roots of $yx^2 - 2x - 5 = 0$ be equal?

10. Sketch the graph of $y = x^2 - 2x - 8$ after first finding all the points of intersection and the value of the Discriminant