

CEM – Yr 12 – Linear, Quadratic and Simultaneous Equations – MC – Paper 11) Solve for x where: $x^2 - 7x - 18 = 0$

a) $x = 3, 4$ b) $x = -9, 2$

c) $x = 9, -2$ d) $x = -3, 2$

2) Solve $x^2 = 2x$

a) $x = -2, 2$ b) $x = -2, 0$

c) $x = 1, -1$ d) $x = 2, 0$

3) Find the sum of the roots of $2x^2 - 4x - 5 = 0$

a) $\frac{1}{2}$ b) 2

c) 4 d) -2

4) Find the product of the roots of $x^2 - 3x - 7 = 0$

a) 4 b) 7

c) -7 d) 2

5) If $x = 2$ is a root of $4x^2 + x + k = 0$ find k

a) 40 b) -40

c) 12 d) -20

6) If α and β are the roots of the equation $2x^2 - 7x + 2 = 0$, find the values of $\alpha^2 + \beta^2$

a) $10\frac{1}{4}$ b) $\frac{4}{41}$

c) $\frac{57}{4}$ d) $\frac{41}{8}$

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- 7) The quadratic equation $x^2 + (k+3)x - k = 0$ has ^{no} real roots. Find all the possible values k can take
- a) $k \leq -3, k \geq -1$ b) $k \geq 1, k \leq 9$
c) $k \leq -9, k \geq -1$ d) $k \geq 1, k \leq 3$
- 8) For what values does the equation $x^2 + kx + 3 - k$ have real, different roots?
- a) $k < -6, k > 2$ b) $k > -2, k \leq 6$
c) $k > 2, k \leq 6$ d) $k \leq -6, k \geq 2$
- 9) Find the values of x which satisfy the equation $x^2 - x - 6 = 0$
- a) $x = -6, 1$ b) $x = -3, 2$
c) $x = 6, -1$ d) $x = 3, -2$
- 10) Find all the real numbers x that satisfy the equation: $x^4 = 4x^2 + 32$
- a) $x = \pm 2\sqrt{2}, x^2 = -4$ (no solution) b) $x = \pm 2\sqrt{2}, x = \pm 2$
c) $x = \pm 8\sqrt{2}, x^2 = -4$ (no solution) d) $x = 4, x = \pm 2$

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Answers

1. c)

2. d)

3. b)

4. c)

5. d)

6. a)

7. c)

8. a)

9. a)

10. d)