INTENSIVE REVISION QUESTIONS (ERQ)
SET 2 –QUADRATIC FUNCTIONS
Name :…….
Form :……
Teacher:…….

1. Solve the quadratic equation $x^2 = -5x - 4$ by factorisation. [3 marks]

2. Find the values of k if the quadratic equation $16x^2 - kx + 324 = 0$ has equal real roots. [4 marks]

3. Determine the types of roots of the quadratic equation $5x^2 + 10x + 5 = 0$. [2 marks]

4. Solve the quadratic equation $x^2 - 3x = 4$ by factorisation. [3 marks]

5. Determine the types of roots of the quadratic equation $x^2 + 3x + 7 = 0$. [2 marks]

6. Solve the equation by factorisation.
$\frac{x^2 - 4x}{-3} = -4$ [3 marks]

7. The profit P, of a factory is given by a quadratic equation $P = 9t^2 - t - 1426$, where t is the time of production. Find the time of production for the factory to recover its capital. [4 marks]

8. Given that α and β are two roots of the quadratic equation $x^2 + 6x + 6 = 0$, form a quadratic equation which has the roots 2α and 2β. [3 marks]

9. The quadratic equation $12x^2 - 2x + n = 0$ has two distinct real roots. Find the range of values of n. [4 marks]

10. State whether each of the following is quadratic equation.
(a) $2x + 5 = -6x - 2$ (b) $x^2 - 25 = 0$ [2 marks]

11. Given that p and q are two roots of the quadratic equation $x^2 - 5x + 3 = 0$, form the quadratic equation with the roots $\frac{p}{2}$ and $\frac{q}{2}$. [3 marks]

12. Form a quadratic equation which has the roots $\frac{1}{6}$ and 7. [2 marks]

13. The quadratic equation $x^2 + kx - 4k = 2$ has roots -3 and 2. Find the value of k. [3 marks]

14. Determine whether 8 and -7 are the roots of the quadratic equation

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$x^2 - 15x + 56 = 0$. [2 marks]

15. Find the range of values of p which the quadratic equation $3x^2 + 2x + 4p = 0$ has roots. [3 marks]

16. Express the quadratic equation $-4x(x + 11) = -1$ in the general form $ax^2 + bx + c = 0$ and state the value of a, b and c. [3 marks]

17. By using the quadratic formula, solve the quadratic equation $(1 - 20x)(x + 18) = x(x + 19)$. Give your answers correct to four decimal places. [4 marks]

18. State whether each of the following is quadratic equation.
(a) $9x + 4 = -4x - 8$ (b) $9x(x + 9) - 14 = 0$ [2 marks]

19. Given that α and β are two roots of the quadratic equation $x^2 + 4x + 1 = 0$, form a quadratic equation which has the roots 2α and 2β. [3 marks]

20. Given that m and n are two roots of the quadratic equation $6x^2 = 42 + 48x$, form a quadratic equation with the roots $2m + 3$ and $2n + 3$. [3 marks]

Answers:

1. $(x + 1)(x + 4) = 0$, $x = -1, -4$
2. 144, -144
3. $5x^2 + 10x + 5 = 0$ has two equal roots
4. $(x - 4)(x + 1) = 0$, $x = 4, -1$
5. $x^2 + 3x + 7 = 0$ has no real roots
6. $x = -2, 6$
7. 12.64 hours
8. $x^2 + 12x + 24 = 0$
9. $n < \frac{1.00}{12}$
10. (a) No (b) Yes
11. $x^2 - (5/2)x + (3/4) = 0$
12. $6x^2 - 43x + 7 = 0$
13. 1
14. $x = -8$ is not a root, $x = 7$ is a root.
15. $p \leq 1/12$
16. $-4x^2 - 44x + 1 = 0$, $a = -4$, $b = -44$, $c = 1$
17. $x = 0.05, -18.05$
18. (a) No (b) Yes
19. $x^2 + 8x + 4 = 0$
20. $x^2 - 22x + 29 = 0$