

RULES

- 1. DO NOT READ IF YOU ARE NOT READY TO ANSWER**
- 2. ONCE YOU START WRITING, LIMIT DISTRACTIONS AND MAKE SURE YOU FINISH AND NOT WRITE THE PRACTISE IN PARTS**
- 3. TIME YOURSELF ACCORDING TO THE SUGGESTED DURATION AND STOP WHEN THE TIMER IS OVER.**
- 4. MARK YOUR WORK.**
- 5. WRITE HOW MUCH YOU GOT FOR THAT PRACTISE**
- 6. WRITE CORRECTIONS**

PRACTISE 1 (SUGGESTED DURATION: 26 MINUTES)

1.1 Solve for x in the following:

1.1.1 $4x^2 = 25$ (2)

1.1.2 (a) $x^2 - 5x = 2$ (4)

(b) Hence, or otherwise, solve $(x - 2)^2 - 5x + 8 = 0$. (3)

1.1.3 $(2 - x)(x + 4) \geq 0$ (3)

1.1.4 $3^{x+1} - 4 + \frac{1}{3^x} = 0$ (5)

1.2 Solve for x and y simultaneously:

$$2x - y + 1 = 0$$

$$x^2 - 3x - 4 - y = y^2 \quad (6)$$

1.3 Given: $x = \frac{\pm\sqrt{b^2-9}}{-2}$

Determine the value(s) of b for which x is a real number. (3)

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PRACTISE 2 (SUGGESTED DURATION: 24 MINUTES)

1.1 Solve for x in each of the following :

1.1.1 $x(x - 5) = 0$ (2)

1.1.2 $4x^2 - 5x = 3$ (Give answer correct to TWO decimal places)
(4)

1.1.3 $2^x(3x + 1) < 0$ (3)

1.1.4 $x - 3x^{\frac{1}{2}} = 4$ (6)

1.2 Calculate, **without using a calculator**:

$$\frac{\sqrt{9^{2028}}}{\sqrt{9^{2030}} - \sqrt{9^{2026}}} \quad (3)$$

1.3 Solve for x and y simultaneously:

$$2^{3x+1} = 4^y \quad \text{and}$$

$$x^2 + 2y = 29 \quad (6)$$

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PRACTISE 3 (SUGGESTED DURATION: 22 MINUTES)

1.1 Solve for x :

1.1.1 $(x - 1)(x + 8) = 10$ (4)

1.1.2 $4x + \frac{4}{x} + 11 = 0; x \neq 0$

(Leave your answer correct to TWO decimal places.) (4)

1.1.3 $6x < 3x^2$ (5)

1.2 Solve for x and y simultaneously:

$3 + x = 2y$ and $x^2 + 4y^2 = 2xy + 7$ (7)

1.3 For which values of m will $x + y$ be a factor of $x^m + y^m$? (2)

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