

SEK. MEN. TEKNIK KUALA KLAUANG
REVISION 1
MATHEMATICS

NAME:..... FORM:.....

SECTION A

Instructions: Each question is followed by four choices of answers, **A, B, C** and **D**.

For each question, choose **one** answer only. Circle your answer.

1. What is the value of the digit 3, in base ten, in the number 235_8 ?

- A 8 C 64
B 24 D 192

2. Express $5^4 + 2$ as a number in base five.

- A 12_5 C 1002_5
B 102_5 D 10002_5

3. Given that $2^{x+2} + 1 = 100001_2$, find the value of x .

- A 3 C 5
B 4 D 6

4. Given that $8^4 + 2(8^2) + 1 = X_8$, find the value of X .

- A 10201 C 800200
B 12100 D 800201

5. Express 256_{10} as a number in base 5.

- A 1102_5 C 2011_5
B 1112_5 D 2110_5

6. Given that $Z + 10110_2 = 11011_2$, find the value of Z .

- A 101_2 C 1111_2
B 1101_2 D 110001_2

7. $111111_2 + 1_2 = 8^n$, find the value of n .

- A 1 C 3
B 2 D 4

8. $10111_2 + 111_2 =$

- A 11110_2 C 110001_2
B 11111_2 D 111000_2

9. What is the value of the digit 3, in base ten, in the number 5302_8 ?

- A 64 C 156
B 128 D 192

10. $100011_2 - 1110_2 =$

- A 10001_2 C 10111_2
B 10101_2 D 11000_2

SECTION B

1. (a) Complete the following table in the answer space for the equation $y = x^3 - 12x + 5$.
- (b) By using a scale of 2 cm to 1 unit on the x -axis and 2 cm to 5 units on the y -axis, draw the graph of $y = x^3 - 12x + 5$ for $-4 \leq x \leq 4$.
- (c) Draw a suitable straight line on your graph to find the values of x which satisfy the equation $x^3 - 14x + 4 = 0$ for $-4 \leq x \leq 4$. State these values of x .
- (d) Shade the region defined by inequalities $x \geq 0$, $y \geq -15$ and $y \leq -10x$.

Answer:

(a)

x	-4	-3	-2	-1	0	1	2	3	4
y		14	21	16	5	-6	-11		21

- (b) Use your graph paper.
- (c) $x = \dots\dots\dots, \dots\dots\dots, \dots\dots\dots$
- (d) On your graph paper in (b).

2. (a) Complete the following table in the answer space for the equation $y = 4 + 2x - x^3$.
- (b) By using a scale of 2 cm to 1 unit on the x -axis and 2 cm to 10 units on the y -axis, draw the graph of $y = 4 + 2x - x^3$ for $-3.5 \leq x \leq 4$.
- (c) Draw a suitable straight line on your graph to find the value of x which satisfy the equation $2x - x^3 = 26$ for $-3.5 \leq x \leq 4$. State this value of x .
- (d) Shade the region defined by inequalities $x \leq 0$, $y \leq 30$ and $y \geq 4 + 2x - x^3$.

Answer:

(a)

x	-3.5	-3	-2	-1	0	1	2	3	4
y	40	25		3	4		0	-17	

- (b) Use your graph paper.
- (c) $x = \dots\dots\dots$
- (d) On your graph paper in (b).