

mth101 tma1 List of Questions

Latex formatted questions may not properly render

Q1 Let $M = \{a, b\}$ then find the power set $[2^M]$.

- ☐ $\{M, a, b\}$
- ☐ $\{\{M, \phi, a\}\}$
- ☐ $\{\{M, a, b, \phi\}\}$
- ☐ $\{x\}$

Q2 If $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$, $A = \{1, 4, 7, 10\}$, $B = \{2, 5, 8\}$. Find $[A \cap B]$

- ☐ $\{1, 3, 4, 5, 6\}$
- ☐ $\{1, 3, 6, 9\}$
- ☐ $\{1, 3, 7, 8, 10\}$
- ☐ $\{2, 4, 6, 8, 10\}$

Q3 If $A = \{1, 2, 3, 4\}$, $B = \{3, 4, 5, 6\}$, $C = \{4, 5, 6, 7\}$ Find $[(A \cap B) \cap (B \cup C)]$

- ☐ 4
- ☐ 7
- ☐ 3
- ☐ 5

Q4 Determine the value(s) of x for which $\left[\frac{x^7 + 5x^5 + 6x^3}{x^5 - 5x^4 + 6x^3}\right]$ is undefined

- ☐ ± 2
- ☐ ± 1
- ☐ $2 \text{ or } 3$
- ☐ $-2 \text{ or } -3$

Q5 Find the value(s) of x for which $\frac{x^3 - 7x^2 + 6x}{x^5 + 4x^4 - 3} = 0$

- ☐ ± 1
- ☐ ± 6
- ☐ $1 \text{ or } 6$
- ☐ $-1 \text{ or } -6$

Q6 A survey in a class shows that 15 out of the pupils play cricket, 11 play tennis and 6 play cricket and tennis. How many pupils are there in the class. (Hint: Assume that everyone plays at least one of these games)

- ☐ 20
- ☐ 12

- ☐ 25
- ☐ 30

Q7 In a survey of 100 students, the numbers studying various languages were found to be: Spanish 28: German 30: French 42: Spanish and French 10: Spanish and German 8: German and French 5: all the three languages 3. How many students were studying no language?

- ☐ 12
- ☐ 25
- ☒ 20
- ☐ 30

Q8 A market survey was conducted to determine consumer acceptance for a group of products. The survey revealed the following about three products A, B, & C. of 155 people interviewed, it was discovered that, 74 like product A, 81 like product B, 60 like product C, 27 like product A & B, 25 like products A & C, 35 like products B & C and 12 did not like any of the three products. Determine the number of people out of those interviewed that liked all three products. Determine the number of people out of those interviewed that liked all three products.

- ☒ 15
- ☐ 7
- ☐ 8
- ☐ 10

Q9 Determine the limiting value of $\frac{3n^2+1}{4(n^2-2)}$ as $n \rightarrow \infty$

- ☒ $\frac{3}{4}$
- ☐ $\frac{3n}{4}$
- ☐ $\frac{n}{4}$
- ☐ $\frac{1}{4}$

Q10 Sum to n terms of three APs are S_1, S_2 and S_3 . The first term of each of them is 1 and common differences are 1, 2, and 3 respectively. Find the nth term to show that the above S_1, S_2 and S_3 are APs.

- ☐ $2n^2+n$
- ☒ $\frac{n(n-1)}{2}$
- ☐ n^2-n
- ☐ $2n^2+2n$