

Mathematical Aptitude

Factorisation

Skill Based Questions

Q.1. Multiple choice questions:

1. The polynomial $2x^3 - 5x^2 + mx + n$ is divisible by $x^2 - 4$ if
(a) $(m,n)=(2,3)$ (b) $(m,n)=(8,-20)$ (c) $(m,n)=(-8,20)$ (d) $(m,n)=(4,7)$
2. For the product $n(n+1)(2n+1), n \in N$, which one of the following is not necessarily correct?
(a) It is always even.
(b) Divisible by 3.
(c) Always divisible by the sum of the square of first n natural numbers
(d) Never divisible by 237

Q.2. Subjective questions:

1. The number $(x-1), x$ and $(x+1)$ are three successive positive integers.
When they are multiplied together, the product of the three numbers is 120 times their sum.
(i) Use this information to form an equation, in terms of x , and show that it simplifies to $x^3 - 361x = 0$
(ii) Factorise completely $x^3 - 361x$.
(iii) Find the three integers.

Ans.
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