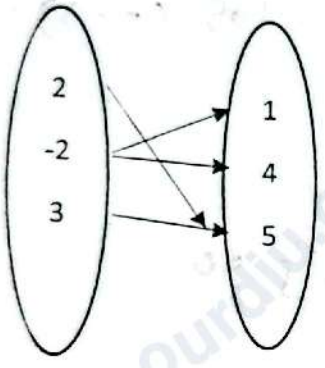
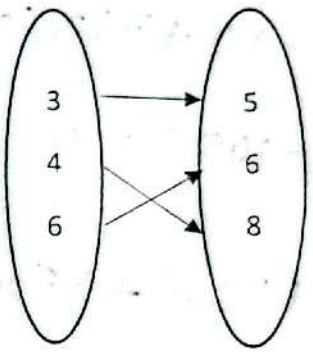
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Q1. Identify the Injective, Surjective, and Bijective Function. 3

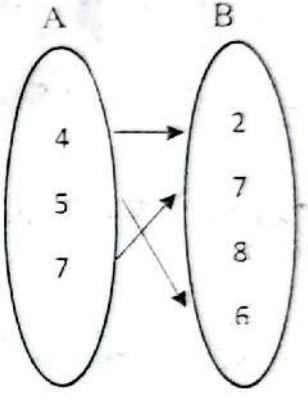
a)



b)



c)



Q2. State the factor theorem. Find the roots of the equation $x^4 - 16x^3 + 86x^2 - 176x + 105 = 0$

By using remainder theorem. 6

Q3. Examine the Differentiability of the following function at the point $x = \frac{\pi}{2}$ 6

$$f(x) = \begin{cases} 1; x < 0 \\ 1 + \sin x; 0 \le x < \frac{\pi}{2} \\ 2 + \left(x - \frac{\pi}{2} \right); x \ge \frac{\pi}{2} \end{cases}$$