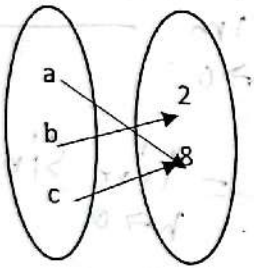
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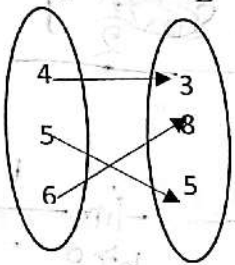
1.(a)If $R=\{(x,a),(y,b),(x,c)\}$ and $S=\{(2,7),(4,7),(5,9),(7,11)\}$ Which Relation is a Function and why?

(b) Classify the Relation as Injective, Surjective and Bijective Function and Why.

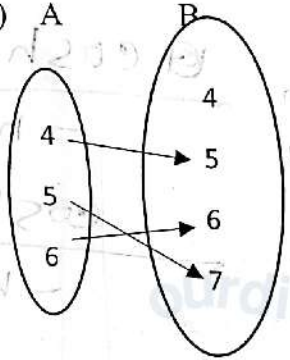
i) A B



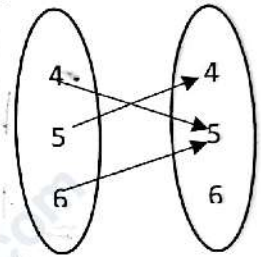
ii) A B



iii) A B



iv) A B



2. Test the Differentiability of $f(x)=\begin{cases} 1+\cos x; & \text{when } x<0 \\ 1+\sin x; & \text{when } 0\le x<\frac{\pi}{2} \\ 2+\left(x-\frac{\pi}{2}\right)^2; & \text{when } x\ge\frac{\pi}{2} \end{cases}$ at $x=\frac{\pi}{2}$

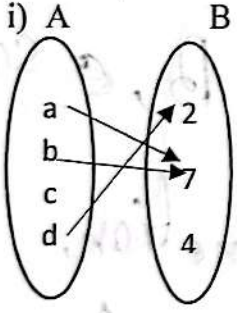
3. Find the solution of the $\frac{x^2+7x+12}{x^3-25x}\le 0$ using sign table.

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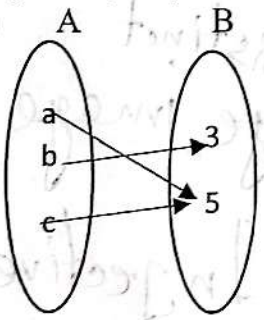
1.(a)If $R=\{(p,y),(q,z),(r,z)\}$ and $S=\{(3,7),(4,8),(7,9),(7,11)\}$ Which Relation is a Function and why?

(b) Classify the Relation as Injective, Surjective and Bijective Function and Why.

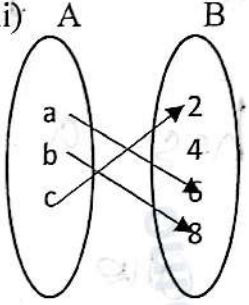
i)



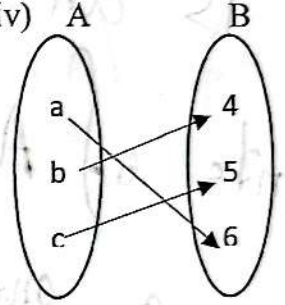
ii)



iii)



iv)



2. Test the Differentiability of $g(x)=\begin{cases} 1+2x; \frac{-1}{2}\leq x<0 \\ 1-2x; 0\leq x\leq \frac{1}{2} \\ 2x-1;\ x>\frac{1}{2} \end{cases}$ at $x=\frac{1}{2}$

3. Find the solution of the $\frac{x^2-2x-35}{x^3-16x^2+64x}\geq 0$ using sign table.