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Answer to the question no: 5

There are 1000 customers
720 customers liked product A, $n(A)$
450 customers liked product B, $n(B)$

we know,

$$n(A \cup B) = n(A) + n(B) - n(A \cap B)$$

$$\Rightarrow n(A \cup B) = 720 + 450 - n(A \cap B)$$

$$\Rightarrow n(A \cup B) = 1170 - n(A \cap B) \quad \text{---} (1)$$

again that, $\Rightarrow n(A \cup B) \leq 1000$

~~$\Rightarrow n(A \cup B)$~~

$\Rightarrow 1170 - n(A \cap B) \leq 1000$ [1 No equation]

$\Rightarrow - n(A \cap B) \leq 1000 - 1170$

$\therefore n(A \cap B) \leq 170$

$\therefore$ Both customers that iked must number is ≤ 170 Ans

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Answer to the question no: 6

Somebody in your class has seen a foreign movie.

Assume: The domain of discourse of X are students in your class.

$\exists x \, seen(x)$

Assume: The domain of discourse of X are all people

$\exists x \, at(x, class) \wedge seen(x)$

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Answer to the question no: 07

(A) Let, $f(x) = 2x+3$

$g(x) = -x^2+1$

now, $(fog)(x) = f(g(x))$

$= f(-x^2+1)$

$= 2(-x^2+1)+3$

$= -2x^2+2+3$

$\therefore fog(x) = -2x^2+5$ Ans

again,

(B) $gof(x) = g(f(x))$

$= g(2x+3)$

$= -(2x+3)^2+1$

$= -\{(2x)^2 + 2\cdot 2x\cdot 3 + 3^2\}+1$

$gof(x) = -4x^2 - 12x - 8$

$\therefore gof(x) \neq fog(x)$ Ans

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Answer to the question no: 8

All diagonal elements (1,1), (2,2), (3,3) Should be present in every Reflexive Relation.

Now, taka any two relation on set $A = \{1,2,3\}$

$R = \{(1,1), (2,2), (3,3), (3,2)\}$

$R_1 = \{(1,1), (2,2), (3,3), (3,2)\}$

$R_2 = \{(1,1), (2,2), (3,3), (2,3)\}$

$\therefore R_1 \cap R_2 = \{(1,1), (2,2), (3,3)\}$

So we tell that If tradition R_1 and R_2 on aset A are reflexive the $R_1 \cap R_2$ is Refleive.