The domain of the function $\cos^{-1}(2x-1)$ is

(A) $[0, 1]$ (B) $[-1, 1]$

(C) $(-1, 1)$ (D) $[0, \pi]$

(Sec 2.3 Q24)

Sol. (a) is the correct answer.

(a) We know that $\cos^{-1} x$ is defined for $x \in [-1, 1]$

$\therefore f(x) = \cos^{-1}(2x-1)$ is defined if

$$-1 \le 2x - 1 \le 1$$

$$\Rightarrow \quad 0 \le 2x \le 2$$

$$\Rightarrow \quad 0 \le x \le 1$$