

If x, y, z are positive integers then value of expression

$(x + y)(y + z)(z + x)$ is

(A) $= 8xyz$ (B) $\geq 8xyz$ (C) $\leq 8xyz$ (D) $= 4xyz$

SOLUTION :

$$AM \geq GM$$

$$\therefore x + y \geq 2\sqrt{xy} \quad - (1)$$

$$y + z \geq 2\sqrt{yz} \quad - (2)$$

$$z + x \geq 2\sqrt{zx} \quad - (3)$$

multiply (1), (2), (3)

$$(x + y)(y + z)(z + x) \geq 8xyz$$