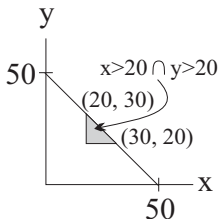


89. Solution: B

$$\text{We are given that } f(x, y) = \begin{cases} \frac{6}{125,000}(50 - x - y) & \text{for } 0 < x < 50 - y < 50 \\ 0 & \text{otherwise} \end{cases}$$

and we want to determine  $P[X > 20 \cap Y > 20]$ . In order to determine integration limits, consider the following diagram:



$$\text{We conclude that } P[X > 20 \cap Y > 20] = \frac{6}{125,000} \int_{20}^{30} \int_{20}^{50-x} (50 - x - y) \, dy \, dx .$$