

137. Let X and Y be identically distributed independent random variables such that the moment generating function of $X + Y$ is

$$M(t) = 0.09e^{-2t} + 0.24e^{-t} + 0.34 + 0.24e^t + 0.09e^{2t}, \text{ for } -\infty < t < \infty.$$

Calculate $P[X \leq 0]$.

- (A) 0.33
- (B) 0.34
- (C) 0.50
- (D) 0.67
- (E) 0.70