

130. The value of a piece of factory equipment after three years of use is  $100(0.5)^X$  where  $X$  is a random variable having moment generating function

$$M_X(t) = \frac{1}{1-2t}, \quad \text{for } t < \frac{1}{2}.$$

Calculate the expected value of this piece of equipment after three years of use.

- (A) 12.5
- (B) 25.0
- (C) 41.9
- (D) 70.7
- (E) 83.8