33. The loss due to a fire in a commercial building is modeled by a random variable \( X \) with density function
\[
f(x) = \begin{cases} 
0.005(20 - x) & \text{for } 0 < x < 20 \\
0 & \text{otherwise.}
\end{cases}
\]
Given that a fire loss exceeds 8, what is the probability that it exceeds 16?

(A) \( \frac{1}{25} \)

(B) \( \frac{1}{9} \)

(C) \( \frac{1}{8} \)

(D) \( \frac{1}{3} \)

(E) \( \frac{3}{7} \)

34. The lifetime of a machine part has a continuous distribution on the interval (0, 40) with probability density function \( f \), where \( f(x) \) is proportional to \((10 + x)^{-2}\).

Calculate the probability that the lifetime of the machine part is less than 6.

(A) 0.04

(B) 0.15

(C) 0.47

(D) 0.53

(E) 0.94