

The Infinite Actuary Exam STAM Online Course
A.1.1. Practice Problems on Describing Distributions

1. [3-CAS.F03.17] Losses have an Inverse Exponential distribution. The mode is 10,000. Calculate the median.
 - A. Less than 10,000
 - B. At least 10,000, but less than 15,000
 - C. At least 15,000, but less than 20,000
 - D. At least 20,000, but less than 25,000
 - E. At least 25,000

2. [3-CAS.F03.19] For a loss distribution where $x \geq 2$, you are given:

- (i) The hazard rate function: $h(x) = \frac{z^2}{2x}$, for $x \geq 2$
- (ii) A value of the distribution function: $F(5) = 0.84$.

Calculate z .

A. 2

B. 3

C. 4

D. 5

E. 6

3. The density of Y is proportional to y^2 for $0 < y < 3$, and is 0 otherwise. Find the 80th percentile of Y .

A. 0.9

B. 1.3

C. 1.8

D. 2.3

E. 2.8

4. A nonnegative random variable has a hazard rate function of $h(x) = A + e^{2x}, x \geq 0$. You are also given $S(0.4) = 0.5$.

Determine the value of A .

- A. Less than 0.5
- B. At least 0.5, but less than 1.0
- C. At least 1.0, but less than 1.5
- D. At least 1.5, but less than 2.0
- E. At least 2.0