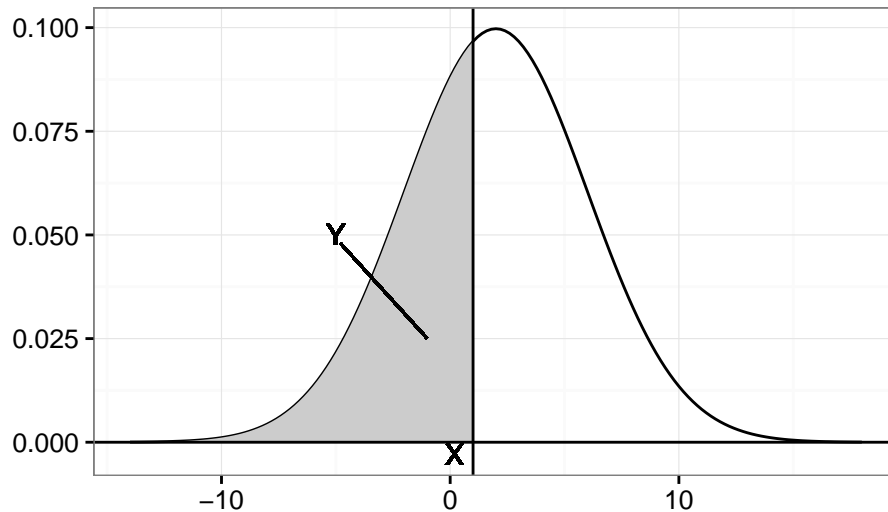


ETC 2420/5242 Quiz 2

Name: SOLUTION

Circle your choice.

1. For the normal model density plotted below



- a. Is the grey area greater than 0.5? NO
b. Which letter represents a quantile? X

2. Which of the following would be the density function for a Poisson distribution? (circle it)

$$P(X = x | \lambda) = \frac{\lambda^x e^{-\lambda}}{x!} \quad x \in \{0, 1, 2, \dots\}$$

3. For the following density function, write down the likelihood function for a sample of $n = 2, x_1 = 4, x_2 = 1$.

$$f(x | \lambda) = e^{-\lambda x} \quad x \geq 0$$

$$L(\lambda) = e^{-\lambda^4} \times e^{-\lambda}$$

4. For a random variable, X , the $P(X > 5) = 0.3$. What's the probability of observing two sample values (drawn independently from the distribution) greater than 5, in a sample of size 2?

$$0.3 \times 0.3 = 0.09$$