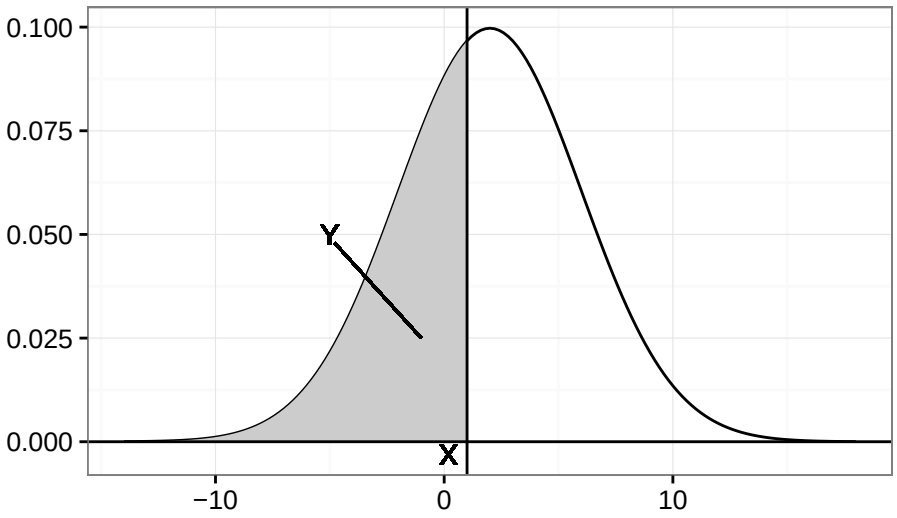
ETC 2420/5242 Quiz 2

Name: _____ (Please write your name as it is given in the Monash system, and no need to write your student number.)

Circle your choice.

1. For the normal model density plotted below



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

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

$$f(x \mid \lambda, k) = \frac{k}{\lambda}\left(\frac{x}{\lambda}\right)^{k-1} e^{(-x/\lambda)^k}, \quad x \geq 0 \quad or \quad P(X = x \mid \lambda) = \frac{\lambda^x e^{-\lambda}}{x!} \quad x \in \{0, 1, 2, ...\}$$

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

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

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?