UNIVERSITY OF TEXAS AT AUSTIN

Quiz 4
The lognormal distribution.

Please, provide your complete solution to the following problems.

Problem 4.1. (5 points) Suppose that the failure time (in seconds) of a certain component is modeled as lognormal random variable $Y = e^X$ such that the mean of X is -0.35 and its variance is 0.04.

What is the failure time t^* such that 95% of the components of the same type would still function after that time?

Problem 4.2. (5 points) Suppose that the failure time (in seconds) of a certain component is modeled as lognormal random variable $Y = e^X$ such that the mean of X is -0.4 and its variance is 0.04.

Find the probability that the failure time is less than 0.4 seconds.

Problem 4.3. (5 points) The time it takes to answer a call at a call center is lognormal with mean $e^{3/2}$ and variance $e^3(e-1)$. What is the distribution of the **rate** at which the calls get answered? State the **name** of the distribution and the value(s) of its parameter(s).