Name:

Due date: Wednesday, June 5.

Reading: Chapter 8: 28, 29, 31, 32, 36, 37, 38, 56, 59.

28 Use the z-table in Appendix A, find the value of z that satisfies the following properties

(a)
$$P(Z \le z) = 0.8238$$

(b)
$$P(Z \le z) = 0.0287$$

(c)
$$P(Z \ge z) = 0.9115$$

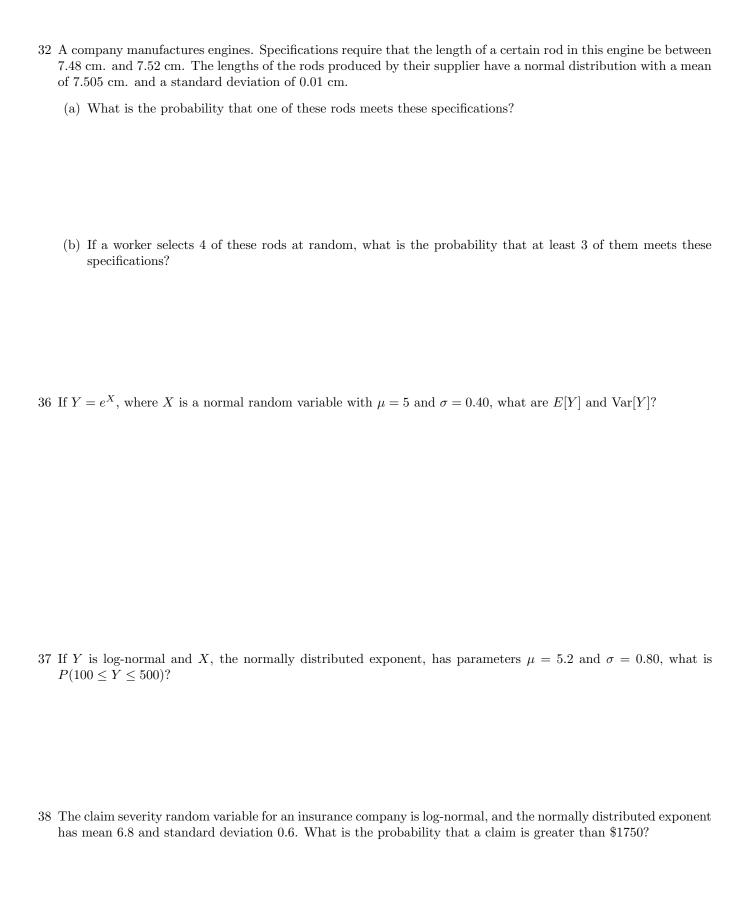
(d)
$$P(Z \ge z) = 0.1660$$

(e)
$$P(|Z| \ge z) = 0.10$$

(f)
$$P(|Z| \le z) = 0.95$$

29 Let z be the standard normal random variable. If z > 0 and $F_z(z) = \alpha$, what are $F_z(-z)$ and $P(-z \le Z \le z)$?

31 An insurance company has 5000 policies and assumes these policies are all independent. Each policy is governed by the same distribution with a mean of \$495 and a variance of \$30,000. What is the probability that the total claims for the year will be less than \$2,500,000?



56	The time to a failure of a component in an electronic device has an exponential distribution with a median of four hours. Calculate the probability that the component will work without failing for at least five hours.
59	The number of days that elapse between the beginning of a calendar year and the moment a high-risk driver is involved in an accident is exponentially distributed. An insurance company expects that 30% of high-risk drivers will be involved in an accident during the first 50 days of a calendar year. What portion of high-risk drivers are expected to be involved in an accident during the first 80 days of a calendar year?