Q1: Exam results are normally distributed with a mean $\mu = 46$ and a standard deviation $\sigma = 4$. What percentage of students obtain a mark
1. larger than 46
2. larger than 50
3. larger than 40
4. less than 38
5. less than 49
6. between 45 and 49
7. between 50 and 54
8. larger than 56 or less than 40
9. within 1.5 standard deviations from the mean
10. outside of 2.3 standard deviations from the mean?

Q2. Assume the scores on an aptitude test are normally distributed with mean 500 and standard deviation 100.
(a) What is the top 5% cut off point?
(b) What is the middle 40%?
(c) If 1000 new students are to take the exam, predict the number who will score more than 65%

Q3. The heights of women are known to be normally distributed with a mean of 67 inches and a standard deviation of 3. A range of T-shirts are made to fit women of different heights as follows:

Small:	62 to 66 inches
Medium:	66 to 70 inches
Large:	70 to 74 inches

(a) What percentage of the population is in each category?
(b) What percentage is not catered for?

Q4. A soft drinks machine is regulated so that it discharges an average of 7 ounces per cup. The amount of drink is normally distributed with standard deviation equal to 0.5 ounces.
(a) What is the probability that a cup contains between 6.7 and 7.3 ounces?
(b) How many cups are likely to overflow if 8 ounce cups are used for the next 1000 drinks?
(c) below what value do we get the smallest 25% of the drinks?