MATH1001 Tutorial

Aims

1. Consolidate and expand your knowledge and understanding of course material.
2. Learn how to teamwork more efficiently.
3. Improve scientific presentation skills and critique skills.

Before the class

1. Review the lecture PPT of this week.
2. Bring a copy of attached worksheet to the tutorial class. It is better to print out a hard copy of worksheet. It will be easier for you to write solution in the worksheet.
3. Remember to sign in before the session starts. You will receive an individual mark for attendance.

In the class

1. The class will be split into 6 small groups (6-7 students in each group). The small groups will be randomly formed in the first tutorial, and will be fixed in the rest of tutorial sessions. The group should discuss the solution of attached worksheet.
2. Instructor will select one small group to present their worksheet solution. Each small groups will present twice. You will receive a group mark for this presentation.
3. Other students are encouraged to ask questions or make critical assessments on these solutions.

Agenda

1. Group discussion. 20min
2. Prestation. 30min

MATH1001 Worksheet III-2

4.3.9

The serum cholesterol levels of 12- to 14-year-olds follow a normal distribution with mean 155 mg/dl and standard deviation 27 mg/dl. What percentage of 12 to 14-year-olds have serum cholesterol values

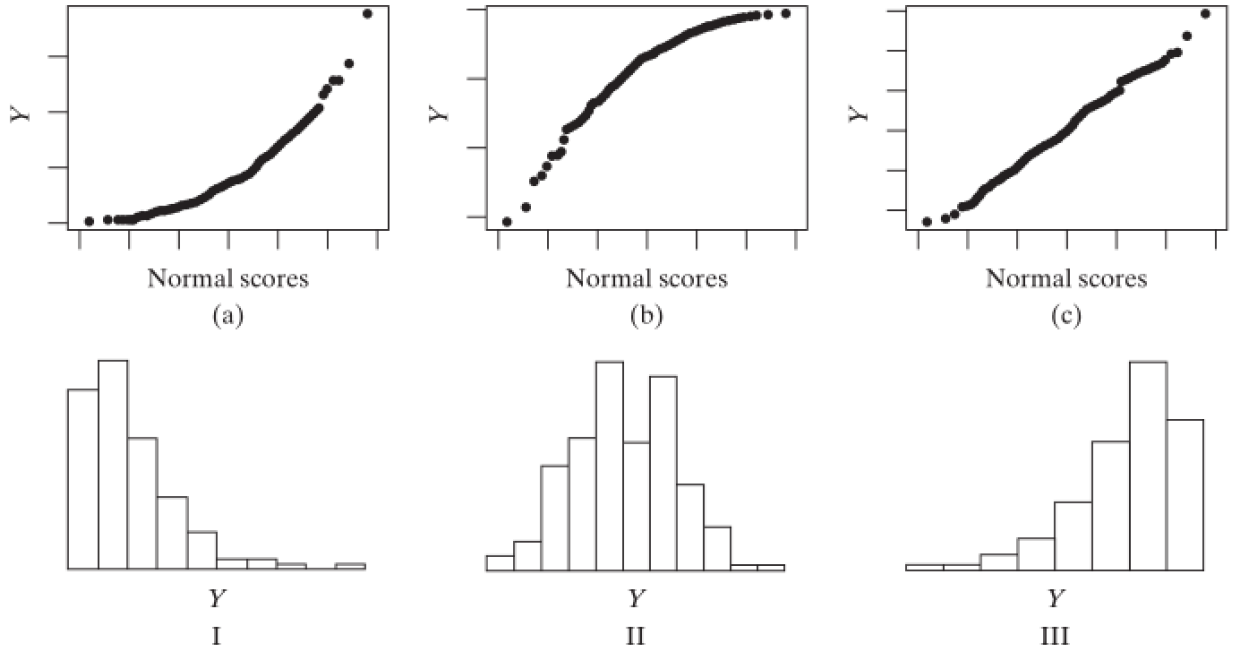
(a) 164 or more?

(c) 186 or less?

(e) between 159 and 186?

4.4.2

The following three normal probability plots, (a), (b), and (c), were generated from the distributions shown by histograms I, II, and III. Which normal probability plot goes with which histogram? How do you know?



5.1.2

Consider taking a random sample of size 3 from the knee replacement population of Example 5.1.3. What is the probability that the total cost for those in the sample will be between $80,000 and $125,000?

Table 5.1.2 Sampling distribution of total surgery costs for samples of size $n = 3$

Sample total	Sample mean	Probability
0	0.0	1/64
35	11.7	6/64
60	20.0	3/64
70	23.3	12/64
95	31.7	12/64
105	35.0	8/64
120	40.0	3/64
130	43.3	12/64
155	51.7	6/64
180	60.0	1/64

5.2.10

In a certain population of fish, the lengths of the individual fish follow approximately a normal distribution with mean 54.0 mm and standard deviation 4.5 mm. We saw in Example 4.3.1 that in this situation, 65.68% of the fish are between 51 and 60 mm long. Suppose a random sample of four fish is chosen from the population. Find the probability that

(a) all four fish are between 51 and 60 mm long.

(b) the mean length of the four fish is between 51 and 60 mm.

5.2.18

A medical researcher measured systolic blood pressure in 100 middle-aged men. 5 The results are displayed in the accompanying histogram; note that the distribution is rather skewed. According to the Central Limit Theorem, would we expect the distribution of blood pressure readings to be less skewed (and more bell shaped) if it were based on n = 400 rather than n = 100 men. Explain.