



ASSIGNMENT 1st SEMESTER	:	BUSINESS NUMERACY 1 (BN101)
CHAPTERS COVERED	:	Wegner (2004, Chapters 2 & 5) Zidel (2010, Chapters 1, 2 & 4)
LEARNER GUIDE	:	UNITS 1 TO 4
DUE DATE	:	3:00 p.m. 20 MARCH 2012
TOTAL MARKS	:	100

INSTRUCTIONS TO CANDIDATES FOR COMPLETING AND SUBMITTING ASSIGNMENTS

The complete 'Instructions to Students for Completing and Submitting Assignments' must be collected from any IMM GSM office, the relevant Student Support Centre or can be downloaded from the IMM GSM website. It is essential that the complete instructions be studied prior to commencing your assignment. The following points highlight only a few important notes.

1. You are required to submit ONE assignment per subject.
2. The assignment will contribute 20% towards the final examination mark, and the other 80% will be contributed by the examination, however, the examination papers will count out of 100%.
3. Although your assignment will contribute towards your final examination mark, you do not have to earn credits for admission to the examinations; you are automatically accepted on registering for the exam.
4. Number all the pages of your assignment (e.g. page 1 of 4) and write your name and surname, student number and subject at the top of **each** page.
5. The IMM GSM requires assignments to be presented on plain A4 paper. You must show all calculations, including and where appropriate multiple choice working calculations. Please use graph paper where graphs are required.
6. A separate assignment cover, which is provided by the IMM GSM, must be attached to the front of each assignment.
7. Retain a copy of each assignment before submitting, in case the original does not reach the IMM GSM.
8. The assignment due date refers to the day up to which assignments will be accepted for marking purposes. The deadline is 3:00 p.m. on 20 March 2012. Late assignments will be accepted, but **25 marks** will be deducted from the maximum mark, if received after 3:00 p.m. on 20 March 2012 and up to 5:00 p.m. the following day, after which no assignments will be accepted.
9. If you fail to follow these instructions carefully, the IMM Graduate School of Marketing cannot accept responsibility for the return of the assignment. It may even result in your assignment not being marked.

Results will be available on the IMM GSM website, www.immgsm.ac.za, on Friday, 4 May 2012.

Answer ALL the questions

IMPORTANT: You may not give the final answer only to any of the questions. You need to show the interim steps of how you arrived at the answer, as this will also be allocated marks. If the final answer is given without any of your workings, you'll receive 1 mark for the correct answer only.

Please use graph paper where graphs are required.

QUESTION 1 [20]

Round all answers to the nearest 1 decimal.

1.1 Simplify the following:

a. $16 \div 2[8 - 3(4 - 2)] + 1$ (2)

b. $4 - 3[4 - 2(6 - 3)] \div 2$ (2)

c. $16 - 3(8 - 3)^2 \div 5$ (2)

d. $(3 + 4 - 6 \div 2 + 2) + ((9 \div 3 + 6*5) \div 11)*((4 + 5 - 6) + (18 - 3*4))$ (2)

1.2 Write the following numbers as a product of prime factors:

a. 56 (2)

b. 270 (2)

1.3 Write the following numbers in index form:

a. 16 using base 2 (2)

b. 81 using base 3 (2)

1.4 Simplify the following:

a. $\left(3\frac{1}{2} - 2\frac{2}{3}\right) \div \left(\frac{1}{2} \times 1\frac{3}{8}\right)$ (2)

b. $\left(2\frac{1}{4} \times \frac{2}{3}\right) \div \left(\frac{3}{5} - 1\frac{1}{4}\right)$ (2)

QUESTION 2 [20]

Round all answers to the nearest 1 decimal.

- 2.1 Ian, Sue and Peter are the owners of a company. Ian owns 63 shares, Sue owns 52 shares and Peter 45 shares in the company. Calculate what percentage of the company each person owns.
- 2.2 A street vendor who sells magazines receives 5% of sales on the first 70 magazines sold and 15% on the balance of sales. If he sells 150 magazines at R30 each, what is his income?
- 2.3 A store owner bought a product for R1 024 but sold it for R1 300. Calculate the percentage mark-up on cost price.
- 2.4 You know that a product will sell for R150 in your shop. The mark-up in your shop is 20%. What is the maximum you'll be prepared to pay for the product?
- 2.5 MTN usually sells the entry level cell phone for R800. They would now like to offer it on a special at R650. What percentage discount are they giving?
- 2.6 A sum of money is divided in the ratio 4 : 5. If the smaller amount is R160, what is the larger amount?
- 2.7 The ratio of girls to boys visiting the zoo is 9 : 5. If 45 girls are visitors to the zoo, how many boys are at the zoo?

(Questions 1 to 6 count 3 marks each and Question 7 counts 2 marks)

QUESTION 3 [40]

Round all answers to the nearest 2 decimals.

- 3.1 Mrs Long is the high-jump coach at Roseland High School. She records the heights jumped by the boys in the high-jump team. Lerato is one of the members of the team. The following are the heights, in metres, of his last 12 jumps:

1,70; 1,68; 1,78; 1,90; 1,74; 1,85; 1,81; 1,95; 1,98; 2,00; 2,02; 1,80

Determine the following:

- a. The mean height of Lerato's 12 jumps. (4)
- b. The median height jumped by Lerato during his last 12 jumps (2)
- c. The height that is his lower quartile (Q1) (2)
- d. The height that is his upper quartile (Q3) (2)
- e. His Interquartile Range (IQR), *in centimetres* (2)
- f. The standard deviation. (3)

3.2 The following rainfall measurements in mm were taken at Sutherland.

43.6	37.8	49.2	40.3	45.5	44.2	38.6	40.6	38.7	46.0
37.1	34.7	35.0	43.0	34.4	49.7	33.5	38.3	41.7	51.0
54.4	43.7	37.6	34.1	46.6	39.3	33.7	40.1	42.4	46.2
36.8	39.4	47.0	50.3	55.5	39.5	35.5	39.4	43.8	39.4

- a. Group the data in the following table: (7)

Rainfall (mm)	Tally	Frequency

- b. Draw a histogram of the grouped data. (5)

3.3 The points (0, 1), (3, 7), (4, 9) all lie on a straight line.

- a. Draw the straight line on a graph. (3)
- b. What is the gradient of this line? (3)
- c. What is the intercept of this line? (3)
- d. Write down the equation of this line. (4)

QUESTION 4 [20]

- 4.1 You are considering investing R100 000 for 2 years. Standard Bank is offering you 11% per annum as opposed to FNB which is offering 10% per annum compounded quarterly. With which bank should you invest? Show all your calculations. **(6)**
- 4.2 You have just taken a second mortgage on your house for R150 000. You are required to pay back the mortgage over 13 years. The interest rate is 9% per annum. You'll be paying off the mortgage in annual instalments at the beginning of each year. Calculate your annual payment using the tables attached. **(6)**
- 4.3 You would like to have R200 000 available in 10 years' time. How much should you invest today if you can earn 8% per annum on a fixed deposit at the bank? **(3)**
- 4.4 Which amount is worth most, assuming that you can earn 8% per annum on an investment? **(5)**
- Option A: R200 000 today;
 - Option B: R251 942.50 in 3 years' time or
 - Option C: R242 000 in 2 years' time.

ASSIGNMENT TOTAL: 100