



KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

**PROVINCIAL COMMON
INFORMAL ASSESSMENT TASK**

GRADE 12

MATHEMATICS

TOPIC TEST : Grade 11 Finance, Probability & Statistics

8TH JUNE 2026

MARKS : 55

TIME : 70 minutes

This question paper consists of 5 pages, a diagram sheet and an information sheet.

Instructions and information:

1. This task consists of 4 questions.
2. Answer ALL the questions.
3. Number the answers correctly according to the numbering system used in this question paper.
4. Clearly show ALL calculations, diagrams, graphs, et cetera which you have used in determining your answers.
5. Answers only will not necessarily be awarded full marks.
6. You may use an approved scientific calculator (non-programmable and non-graphical), unless stated otherwise.
7. If necessary, answers should be rounded off to TWO decimal places, unless stated otherwise.
8. Write neatly and legibly.

QUESTION 1

- 1.1 A company bought machinery costing R80 000. Using the reducing balance method, the machinery had a book value of R20 000 after 5 years. Calculate the rate of depreciation. (3)
- 1.2 Calculate the effective interest rate if interest is compounded at 5% p.a. compounded quarterly. (3)
- 1.3 Sipho invested R30 000 for 6 years. The investment earned interest at 12% p.a., compounded monthly for the first two years. Thereafter the interest rate changed to 10,8% p.a., compounded semi-annually for the rest of the period. Calculate the value of the investment at the end of 6 years. (No other transactions were made on the account.) (4)
- 1.4 Mary deposited R25 000 into a savings account with an interest rate of 18% p.a., compounded monthly. Mary withdrew R8 000 from the account 2 years after depositing the initial amount. She deposited another R4 000 into this account $3\frac{1}{2}$ years after the initial deposit. What amount will Mary have 5 years after making the initial deposit in this account? (5)

[15]

QUESTION 2

- 2.1 Given: $P(A) = 0,2$
 $P(B) = 0,5$
 $P(A \text{ or } B) = 0,6$ where A and B are two different events

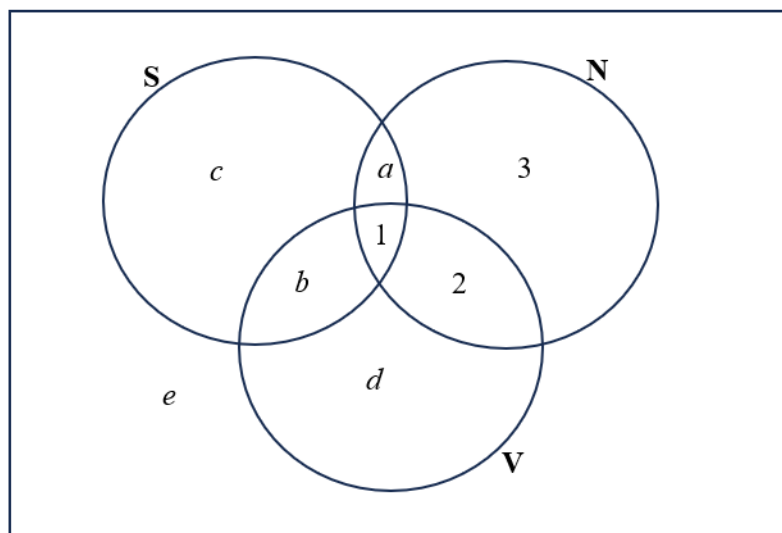
2.1.1 Calculate $P(A \text{ and } B)$ (2)

2.1.2 Are the events A and B independent? Show your calculations. (3)

- 2.2 A survey was conducted amongst 100 learners at a school to establish their involvement in three codes of sport, soccer, netball and volleyball. The results are shown below.

- 55 learners play soccer (S)
- 21 learners play netball (N)
- 7 learners play volleyball (V)
- 3 learners play netball only
- 2 learners play soccer and volleyball
- 1 learner plays all three sports

The Venn diagram below shows the information above.



2.2.1 Determine the values of a , b , c , d and e (5)

2.2.2 What is the probability that one of the learners chosen at random from this group plays netball or volleyball? (2)

- 2.3 The probability that the first answer in a maths quiz competition will be correct is 0,4. If the first answer is correct, the probability of getting the answer correct rises to 0,5. However, if the first answer is wrong, the probability of getting the next answer correct is only 0,3.

2.3.1 Represent the information on a tree diagram. Show the probabilities associated with each branch as well as the possible outcomes. (3)

2.3.2 Calculate the probability of getting the second answer correct. (3)

[18]

QUESTION 3

A school held a sports day. One of the items on the programme was an obstacle race. Teams of 10 parents and learners participated in this race. The table below shows the time taken, in minutes, by each member of a particular team to complete the race.

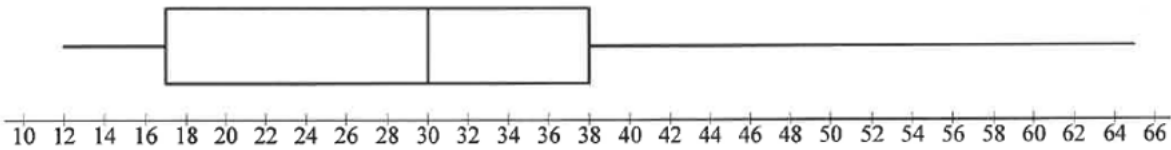
4	12	13	16	17	18	20	22	22	25
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- 3.1 How long, in minutes, did it take for the fastest member of this team to complete the race? (1)
- 3.2 Determine the mean time taken by this team. (2)
- 3.3 Calculate the standard deviation for the data. (1)
- 3.4 How many members of the team completed the obstacle race outside of two standard deviations of the mean? (3)
- 3.5 It took another team a total time of $x + 5$ minutes to complete the race. Calculate the value of x if the overall mean of the two teams combined was 18 minutes. (3)

[10]

QUESTION 4

4.1 Mr Brown conducted a survey on the amount of airtime (in rands) EACH student had on his or her cell phone. He summarised the data in the box and whisker diagram below.



- 4.1.1 Write down the five-number summary of the data. (2)
- 4.1.2 Determine the interquartile range. (1)
- 4.1.3 Comment on the skewness of the data (1)

4.2 The table below shows the wight(in grams) that each of the 27 participants in the weight-loss programme lost in total over the first 4 weeks.

WEIGHT LOSS OVER 4 WEEKS (IN GRAMS)	FREQUENCY
$1\ 000 < x \leq 1\ 500$	2
$1\ 500 < x \leq 2\ 000$	3
$2\ 000 < x \leq 2\ 500$	3
$2\ 500 < x \leq 3\ 000$	4
$3\ 000 < x \leq 3\ 500$	5
$3\ 500 < x \leq 4\ 000$	7
$4\ 000 < x \leq 4\ 500$	2
$4\ 500 < x \leq 5\ 000$	1

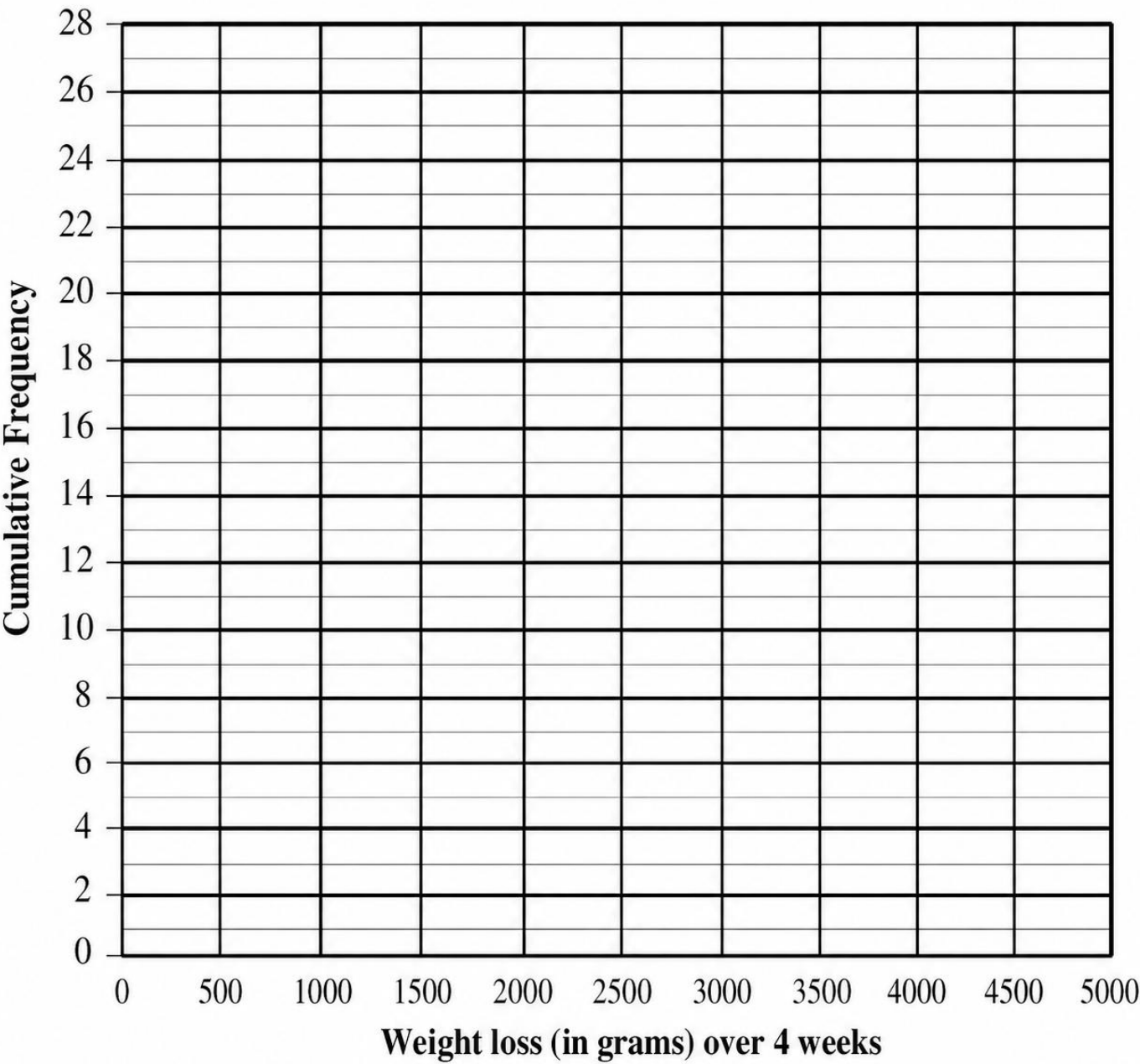
- 4.2.1 Estimate the average weight loss, in grams, of the participants over the first 4 weeks. (2)
- 4.2.2 Draw an ogive (Cumulative frequency graph) of the data on the diagram sheet provided on page 6. (4)
- 4.2.3 The weight-loss programme guarantees a weight loss of 800 g per week if a person follows the programme without cheating. Hence, determine how many of the participants had an average weight loss of 800 g or more per week over the first 4 weeks. (2)

[12]

TOTAL: 55

Learner Name: _____

OGIVE



INFORMATION SHEET: MATHEMATICS

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$A = P(1 + ni)$$

$$A = P(1 - ni)$$

$$A = P(1 - i)^n$$

$$A = P(1 + i)^n$$

$$T_n = a + (n - 1)d$$

$$S_n = \frac{n}{2}[2a + (n - 1)d]$$

$$T_n = ar^{n-1}$$

$$S_n = \frac{a(r^n - 1)}{r - 1}; r \neq 1$$

$$S_\infty = \frac{a}{1 - r}; -1 < r < 1$$

$$F = \frac{x[(1 + i)^n - 1]}{i}$$

$$P = \frac{x[1 - (1 + i)^{-n}]}{i}$$

$$f'(x) = \lim_{h \rightarrow 0} \frac{f(x + h) - f(x)}{h}$$

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$M\left(\frac{x_1 + x_2}{2}; \frac{y_1 + y_2}{2}\right)$$

$$y = mx + c$$

$$y - y_1 = m(x - x_1)$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \tan \theta$$

$$(x - a)^2 + (y - b)^2 = r^2$$

In ΔABC :

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$a^2 = b^2 + c^2 - 2bc \cdot \cos A$$

$$\text{area } \Delta ABC = \frac{1}{2}ab \cdot \sin C$$

$$\sin(\alpha + \beta) = \sin \alpha \cdot \cos \beta + \cos \alpha \cdot \sin \beta$$

$$\sin(\alpha - \beta) = \sin \alpha \cdot \cos \beta - \cos \alpha \cdot \sin \beta$$

$$\cos(\alpha + \beta) = \cos \alpha \cdot \cos \beta - \sin \alpha \cdot \sin \beta$$

$$\cos(\alpha - \beta) = \cos \alpha \cdot \cos \beta + \sin \alpha \cdot \sin \beta$$

$$\cos 2\alpha = \begin{cases} \cos^2 \alpha - \sin^2 \alpha \\ 1 - 2\sin^2 \alpha \\ 2\cos^2 \alpha - 1 \end{cases}$$

$$\sin 2\alpha = 2\sin \alpha \cdot \cos \alpha$$

$$\bar{x} = \frac{\sum x}{n}$$

$$\sigma^2 = \frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n}$$

$$P(A) = \frac{n(A)}{n(S)}$$

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

$$\hat{y} = a + bx$$

$$b = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sum (x - \bar{x})^2}$$