



# higher education & training

Department:  
Higher Education and Training  
**REPUBLIC OF SOUTH AFRICA**

## **GENERAL EDUCATION AND TRAINING CERTIFICATE**

### **NQF LEVEL 1**

### **AET LEVEL 4 SITE-BASED ASSESSMENT**

**LEARNING AREA : MATHEMATICS AND  
MATHEMATICAL SCIENCES**

**CODE : MMSC4**

**TASK : TEST**

**TIME : 2 HOURS**

**MARKS : 50**

**This assessment task consists of 4 pages.**

**INSTRUCTIONS AND INFORMATION**

1. Answer ALL the questions in ANSWER BOOK.
2. Read ALL the questions carefully.
3. Calculators may be used.
4. Clearly show calculations, diagrams, graphs, et cetera which you have used in determining the answers,
5. Number the answers according to the numbering system used in this question paper.

**QUESTION 1**

- 1.1 The following number pattern shows the first five terms in a sequence:  
14; 11; 8;  $a$ ;  $b$ ; ...
- 1.1.1 What are the values of  $a$  and  $b$  if the number pattern is consistent? (2)
- 1.1.2 Describe the pattern in your own words. (2)
- 1.1.3 Determine the value of the seventh term of the sequence. (1)
- 1.1.4 Determine the formula for the  $n^{\text{th}}$  term. (2)
- 1.1.5 Calculate the value of the  $100^{\text{th}}$  term. (3)
- 1.1.6 Determine which term will be the first term to be less than  $-598$  (5)
- [15]**

**QUESTION 2**

- 2.1 Subtract  $x^2 - 5x + 3$  from  $2x^2 + 5x - 12$ . (3)
- 2.2 Factorise the following expressions completely:  
 $a^2(a - 1) - 25(a - 1)$  (4)
- 2.3 Solve for  $m$  if:  $8m + 9 = 7m + 8$  (3)
- 2.4 Solve the inequality below and represent the solution on a number line.  
 $8 - p > 2$  (4)
- [14]**

**QUESTION 3**

- 3.1 Body mass index (BMI) refers to the ratio of a person's mass (in kilograms) to the square of his or her height (in metres). BMI results can be classified in this table below:

<b>BMI (kg/m<sup>2</sup>)</b>	<b>Classification</b>
Lower than 20	Underweight
20 to 25	Normal weight
25 to 30	Overweight
Higher than 30	Very overweight or obese

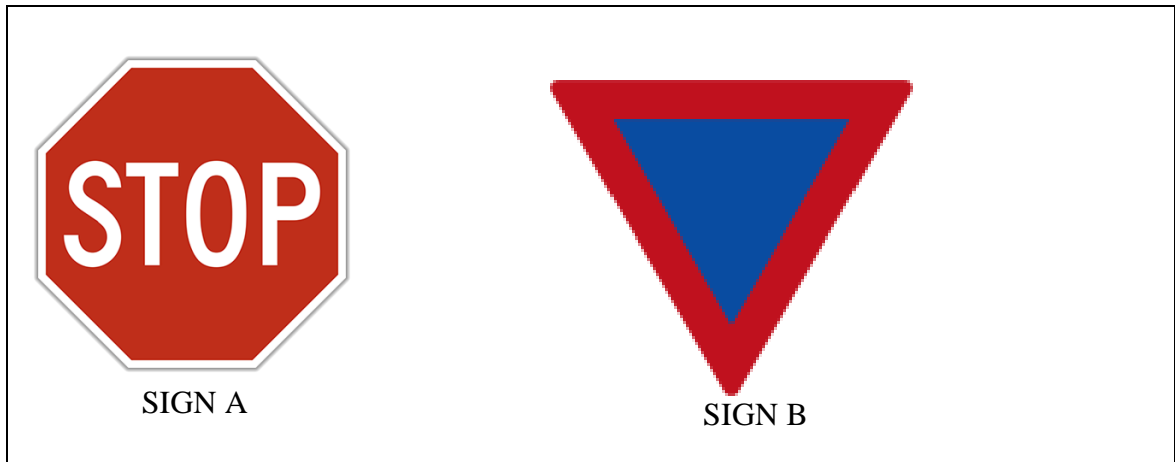
- 3.1.1 Thando weighs 95 kg and is 1,75m tall. Calculate her BMI using the formula:  

$$BMI = \frac{mass}{(height)^2}$$
 (3)
- 3.1.2 Classify Thando's BMI using the table above. (1)
- 3.1.3 Determine the height of a person in (metres) whose BMI is 28 and weighs 76 kg. Round off the answer correct to TWO decimal places. (4)
- 3.1.4 Thando's husband has BMI of 36 kg/m<sup>2</sup>. Suggest TWO ways in which he could reduce his BMI. (2)
- 3.2 The equation  $y = 2x - 1$  defines a straight line graph.
- 3.2.1 Determine the  $y$  –intercept and the  $x$  –intercept of the graph. (2)
- 3.2.2 Draw the graph of  $y = 2x - 1$  (4)

**[16]**

**QUESTION 4**

4.1 Given below are the road signs



4.1.1 Write down the name of the geometric shape for SIGN A and SIGN B. (2)

4.1.2 Calculate the area of the shape for SIGN B if the base is  $12\text{ cm}$  and perpendicular height is  $8\text{ cm}$ . Use the formula of  $A = \frac{1}{2}bh$ . (2)

4.1.3 How many lines of symmetry are there in a SIGN A? (1)  
[5]

**TOTAL: 50**