



**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**

**TOOL : TEST**

**TIME : 2 HOURS**

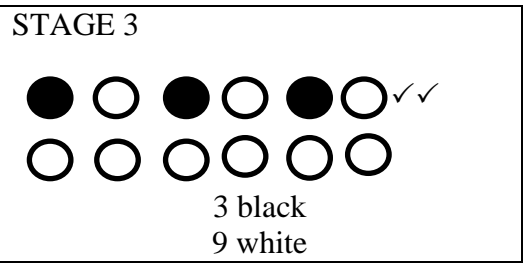
**MARKS : 50**

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

## INSTRUCTIONS AND INFORMATION FOR THE TEACHER

- This task is set on:
  - ◇ US ID 7448 SO1,2,3,4 and 5
  - ◇ US ID 7452 SO1,2 and 3
  - ◇ US ID 7453 SO1,2 and 3
- This task should be done individually and under controlled circumstances.
- Consolidation of the unit standards by working through previous question papers should also be done in conjunction with this task to prepare learners for the examination.

### QUESTION 1

1.1	1.1.1	39 ✓; 48 ✓	Each correct answer	(2)
	1.1.2	Linear ✓ OR x –values directly proportional to the y-values ✓	Correct answer Correct reason	(2)
	1.1.3	Add 9 to each term to get the following term ✓ OR Increase by 9 ✓	Correct answer	(1)
1.2		$T_4 = 2(4)^2 ✓ + 1$ $T_4 = 33 ✓$ $T_5 = 2(5)^2 ✓ + 1$ $T_4 = 51 ✓$	Each correct substitution Each correct answer	(4)
1.3	1.3.1	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>STAGE 3</p>  <p>3 black 9 white</p> </div>	Correct number of black and white marbles Correct layout	(2)
	1.3.2	Substitute at different stages number(s) into $w = 3s$ to see if desired numbers of white marbles ( $w$ ) are obtained $s = 1: w = 3(1) = 3 ✓$ $s = 2: w = 3(2) = 6 ✓$ $s = 3: w = 3(3) = 9$ $s = 4: w = 3(4) = 12$ $s = 5: w = 3(5) = 15$ OR Constant difference = 3 ∴ linear rule Substitute $s = 1 w = 3s = 3(1) = 3 ✓$ (or any other stage number and corresponding the black marbles. ✓)	Each correct difference(s)=3	(2)

	1.3.3	(a) $T_{12} = 3(12) = 36$ white marbles ✓ (b) $T_{102} = 3(102) = 306$ white marbles ✓	Each correct answer	(2)
	1.3.4	$30 = 3(s)$ ✓ $s = 10$ ✓	Correct substitution Correct answer	(2) [17]

**QUESTION 2**

2.1		$\begin{array}{r} 3x^2 - 4xy + 6 \\ -(x^2 - 3xy - 5) \\ \hline 2x^2 - xy + 11 \end{array}$ ✓✓✓	Each correct term	(3)
2.2	2.2.1	$(x+1)(x+2)$ $x^2 + 2x + x + 2$ $x^2 + 3x + 2$ ✓✓✓	Each correct term	(3)
	2.2.2	$3x^2 + 2x + 3x^2 - (x^2 - x)$ $6x^2 + 2x - x^2 + x$ $5x^2 + 3x$ ✓✓	Each correct term	(2)
2.3	2.3.1	$9x^2 + 3x$ $3x(3x + 1)$ ✓✓	Each correct factor	(2)
	2.3.2	$36a^2 - 25$ $(6a - 5)(6a + 5)$ ✓✓	Each correct bracket	(2)
2.4		$\frac{y}{7} - 3 = 1$ $y = (1 + 3) \times 7$ ✓ $y = 28$ ✓	Correct transposing Correct answer	(2) [14]

**QUESTION 3**

3.1	3.1.1	Athletics✓		(1)
	3.1.2	Total number of tickets sold is 57 11424✓	Correct answer	(1)
	3.1.3	Percentage for swimming = $\frac{17\,70239}{5711424} \times 100$ ✓ = 31%✓	Correct substitution Correct answer	(2)
3.2	3.2.1	$2x + y = 8$ $y = -2x + 8$ ✓	Correct answer	(1)
	3.2.2	For y- intercept let x=0 $y = -2(0) + 8$ ✓ $y = 8$ ✓ For x-intercept let y=0 $0 = -2x + 8$ ✓ $x = 4$ ✓	Correct substitution Correct answer  Correct substitution Correct answer	(4)
	3.2.3	Gradient = $-2$ ✓	Correct answer	(1)
	3.2.4	decreasing✓	Correct answer	(1)
				<b>[11]</b>

**QUESTION 4**

4.1	The theorem of Pythagoras states:In a right-angle triangle the square of the hypotenuse is equal to the sum of the square of the other two sides. ✓✓	Correct definition	(2)
4.2	$M^2 = 45^2 - 36^2$ ✓ (theorem of Pythagoras) $M^2 = 2\,025 - 1296$ ✓ $M^2 = 729$ $M^2 = \sqrt{729}$ ✓ $M = 27\,cm$ ✓	Correct substitution Correct simplification Correct answer Correct unit	(4)
4.3	Diagram A✓	Correct answer	(1)
4.4	Enlargement✓	Correct transformation	(1)
<b>[8]</b>			

**TOTAL: 50**