



**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 : INVESTIGATION

TIME : 3 HOURS

MARKS : 50

This assessment tool consists of 4 pages.

INSTRUCTIONS AND INFORMATION FOR THE TEACHER.

1. This task is set on:
 - US ID 7452
 - US ID 7448
 2. This investigation should be done in pairs. Each member should however write his/her own work.
 3. ACTIVITY 1 is marked using a rubric and ACTIVITY 2 is marked using a memorandum.
 4. A class discussion may be conducted before or during completion of the task.
 5. Learners can complete their work at home.
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Marking rubric for **ACTIVITY 1.1.1–1.1.7**

CRITERIA	LEVEL				MARKS
	MARKS 0	MARKS 1–2	MARKS 3–4	MARKS 5	
Correctness of calculations in QUESTION 1.1.1–1.1.3	NO calculations made for QUESTION 1.1.1–1.1.3	Made major (not squaring the values) mistakes in calculations	Made minor (squaring the values but not getting accurate answer) mistakes in calculations	Made no errors. Completed accurately	× 2
Question 1.1.4: Drawing a right angled triangle with a dimension of 5:12:13	Make no attempt to draw a right-angled triangle	Drawing a right angled triangle with 2 wrong dimensions	Draw a right angled triangle with one wrong dimension (other dimensions right)	Accurate drawing and exactly the same dimension	× 1
Question 1.1.4: Showing calculations following procedure from QUESTION 1.1.1–1.1.3. Using the values 5:12:13	NO calculations are made	Made errors in calculation (not squaring the values)	Made minor (squaring the values but not getting accurate answers) mistakes in calculations	Calculations are clearly and completed	× 1
Question 1.1.6: Drawing any triangle with the dimensions 9 : 10 : 13	Made NO attempt to draw a triangle	Drawing a triangle with 2 wrong dimensions	Draw a right angled triangle with one wrong dimension (other dimensions right)	Accurate drawing and exactly the same dimension	× 1
Question 1.1.6: Showing calculations following procedure from QUESTION 1.1.1–1.1.3 using the values 9 : 10 : 13	NO calculations are made	Made errors in calculation (not squaring the values)	Made minor (squaring the values but not getting accurate answers) mistakes in calculations	Calculations are clearly and completed	× 1
Question 1.1.7: Identification/ Understanding of a theorem, and mathematical reasoning in conclusion	NO theorem and no logical reasoning	Identified the theorem but did not reason	Identified and described theorem and able to reach a consistent conclusion	Identified and described the theorem correctly and offer and proper logical reasoning	× 1

MMSC4	2	SBA – Tool: Investigation 2016			
					<u>35</u>

2.1	2.1.1	<table><tr><td>Side length of square (cm)</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr><tr><td>Number of small squares</td><td>1</td><td>4</td><td>9</td><td>16</td><td>25</td><td>36</td></tr><tr><td>Perimeter of large square (cm)</td><td>4</td><td>8</td><td>12</td><td>16</td><td>20</td><td>24</td></tr></table>						Side length of square (cm)	1	2	3	4	5	6	Number of small squares	1	4	9	16	25	36	Perimeter of large square (cm)	4	8	12	16	20	24		(5)
		Side length of square (cm)	1	2	3	4	5	6																						
		Number of small squares	1	4	9	16	25	36																						
		Perimeter of large square (cm)	4	8	12	16	20	24																						
1 mark for each correct column (number of small squares and perimeter of large square)✓																														
	2.1.2	The number of small squares needed for each squares is equal to the side length times itself✓✓				Correct explanation	(2)																							
	2.1.3	(a)	Rule for number of small squares = n^2 ✓				Each correct formula (2 x 1)	(2)																						
		(b)	Rule for perimeter of large square = $4n$ ✓																											
	2.1.4	50×50 ✓ = 2 500✓				Correct substitution Correct answer	(2)																							
	2.15	Perimeter = $4n = 4 \times 90$ ✓ = 360✓				Correct substitution Correct answer	(2)																							
	2.1.6	$4n = 600$ ✓ $n = 150$ large squares✓					(2)																							
							[15]																							
TOTAL:							50																							