



**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**1. MARKING KEY**

A = Accuracy

M = Method

QUESTION 1

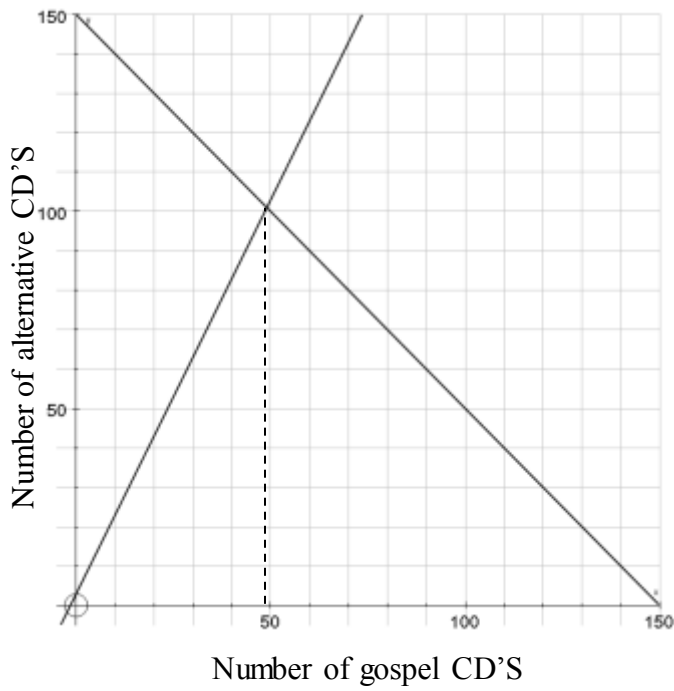
1.1	1.1.1	lay –out of the toothpicks for pattern 4  <div style="display: flex; justify-content: space-between; align-items: center;"> Pattern 4 ✓✓A </div>	One mark for correct shape One mark for the correct number of toothpicks	(2)
	1.1.2	The relationship is that you need 6 toothpicks for the first hexagon; thereafter you only need 5 match sticks for every additional hexagon. ✓✓A OR Start with 6 toothpicks and increase by 5 each time. ✓✓A	Correct explanation	(2)
	1.1.3	$t = 6 + (n - 1) \times 5$ ✓✓A OR $T_n = 5n + 1$ ✓✓A	Correct equation	(2)
	1.1.4	$t = 6 + (n - 1) \times 5$ $t = 6 + (20 - 1) \times 5$ ✓M $t = 101$ ✓ OR $T_n = 5n + 1$ $T_{20} = 5(20) + 1$ ✓ $T_{20} = 100 + 1$ $T_{20} = 101$ ✓A	Substitution Correct Answer	(2)
1.2	1.2.1	5 ✓ A; 8 ✓A; 11 ✓A	Correct Answers	(3)
	1.2.2	$T_{30} = 3(30)$ ✓ + 2 $= 92$ ✓A	Substitution Correct Answer	(2)
	1.2.3	$257 = 3n + 2$ ✓ $255 = 3n$ ✓A $85 = n$ ✓A T_{85} has a value of 257	Substitution Simplification Correct Answer	(3) [16]

QUESTION 2

2.1	2.1.1	Total cost(y)	$250\checkmark A$	$325\checkmark A$	350	425	Correct Answers	(4)
		Hours worked (x)	1	$2\frac{1}{2}$	$3\checkmark A$	$4\frac{1}{2}$ or $4,5\checkmark A$		

	2.1.2	$y = 50(0,25)\checkmark A + 200\checkmark A$ $y = 212,50$ The electrician will be paid R 212, 50 $\checkmark A$ for 15 minutes.	conversion Substitution Correct Answer	(3)
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2.2	2.2.1	Write the two equations that represent this information. Let y = alternative and x = Gospel. Then $y = 2x + 3\checkmark\checkmark A$ and $x + y = 150.\checkmark\checkmark A$	Correct equations Accept any variables)	(4)
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	2.2.2	 <p>Number of alternative CD'S</p> <p>Number of gospel CD'S</p>	2 marks for each Correct graph	(4)
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	2.2.3	Line drawn from the point of intersection of the two graphs perpendicular to the x -axis✓ Just below 50 rock CD's.✓A		(2)
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	2.2.4	$y = 150 - x$ and $y = 2x + 3$ $150 - x = 2x + 3 \checkmark A$ $-3x = -147 \checkmark A$ $x = 49 \checkmark A$ The gospel CD's are represented on the x axis.	Simplification Correct answer	(3) [20]
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QUESTION 3

3.1	3.1.1	$= 6k \checkmark A$	Correct answer	(1)
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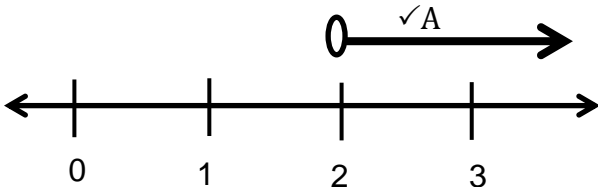
	3.2.3	$= 21a \checkmark A$	Correct answer	(1)
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3.2	3.2.1	$5x - 20$ $= (5) \checkmark A (x - 4) \checkmark A$	Correct answers	(2)
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	3.2.2	$100b^2 - 81$ $= (10b - 9) \checkmark A (10b + 9) \checkmark A$	Correct answers	(2)
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	3.2.3	$a^2 - 10a - 24$ $= (a + 2) \checkmark A (a - 12) \checkmark A$	Correct answers	(2)
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3.3	$17p - 8p + 16 = -9$ $9p + 16 + 9 = 0 \checkmark A$ $9p + 25 = 0$ $9p = -25 \checkmark A$ $\frac{9p}{9} = \frac{-25}{9}$ $p = -2,78 \checkmark A$	Transpose Simplification Correct answer	(3)
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3.4	Solve the inequality and graph the solution. $4 > 6 - p$ $6 - p < 4$ $-p < -6 + 4 \checkmark A$ $-p < -2$ $p > 2 \checkmark A$	Simplification Correct answer Correct graph	 (3) [14]
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TOTAL:**50**