



# higher education & training

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

## **GENERAL EDUCATION AND TRAINING CERTIFICATE**

**NQF LEVEL 1**

**AET LEVEL 4 SUMMATIVE ASSESSMENT**

**LEARNING AREA : MATHEMATICS AND  
MATHEMATICAL SCIENCES**

**CODE : MMSC4**

**TOOL : ASSIGNMENT**

**TIME : TWO WEEKS**

**MARKS : 50**

**This assessment tool consists of 5 pages.**

## INSTRUCTION AND INFORMATION FOR THE TEACHER

1. This assignment is based on unit standards ID 7452 and unit standard ID 7464 can be given while the unit standards title is taught.
2. Answer all questions in the ANSWER BOOK.
3. Calculators may be used unless stated otherwise.

### QUESTION 1

1.1	Distance travelled( <i>km</i> )						Each correct answer	(4)
	Cost( <i>R</i> )							
		1	5	12	60	125✓		
		R5,40	R27✓	R64,80✓	R324✓	R675		
	1.1.2	$C = R5,40 \times d$ ✓				Correct formula		(1)
	1.1.3	$C = R5,40 \times d$ $C = R5,40 \times 98$ ✓ $C = R529,20$ ✓				Correct substitution Correct answer		(2)
1.2	1.2.1	$C = (R2,90 \times d) + R20$ ✓				Correct formula		(1)
	1.2.2	$C = (R2,90 \times d) + R20$ $C = (R2,90 \times 60) + R20$ ✓ $C = R194,00$ ✓				Correct substitution Correct answer		(2)
	1.2.3	$C = R5,40 \times 6$ $C = R32,40$ ✓ $C = (R2,90 \times 6) + R20$ $C = R37,40$ ✓ Amanda's taxi services is cheaper for <b>6km</b> ✓				Correct answers Correct statement		(3)
	1.2.4	$C = R5,40 \times d$ $C = R5,40 \times 54km$ $C = R291,60$ ✓  $C = (R2,90 \times d) + R20$ $C = (R2,90 \times 54) + R20$ $C = R176,60$ ✓ Zanele's discount taxi service is cheaper on the <b>54 km</b> ✓				Correct answers Correct statement		(3)
	1.2.5	For a distance of 8 km it cost the same to travel with Amanda's taxi services or with Zanele's discount taxi service. For any distance less than 8 km it is cheaper to travel with Amanda and for any distance over 8 km it is cheaper to travel with Zanele. ✓✓				Correct statement		(2)
[18]								

**QUESTION 2**

2.1	2.1.1	Time( <i>h</i> )	0	1✓	2	3✓	4	5✓	6	7✓	1mark for every 4 values of time and distance	(3)
		Distance( <i>km</i> )	0	120	240	360	480	600	720	780		
	2.1.2	Direct proportion relationship✓							Correct answer		(1)	
	2.1.3	Both variables, namely distance and time, are continuous variables.✓ The reason is that in each case the variables can take on values that are fractions or decimal.✓							Correct statement Correct reason		(2)	
	2.1.4	300 <i>km</i> ✓							Correct answer		(1)	
	2.1.5	5,5 hours✓							Correct answer		(1)	
	2.1.6	To reduce speeding in residential areas thus reducing accidents.✓ To control traffic flow.✓ (Any other relevant reason.)							Relevant reason Relevant reason		(2) [10]	

## QUESTION 3

3.1	3.1.1	rectangle✓ triangle ✓ trapezium✓	Each correct name	(3)
	3.1.2	$(BE)^2 = (AE)^2 - (AB)^2$ Theorem of Pythagoras✓ $(BE)^2 = (34cm)^2 - (30cm)^2$ ✓ $(BE)^2 = 1\,156\,cm^2 - 900\,cm^2$ $(BE)^2 = 256\,cm^2$ $(BE)^2 = \sqrt{256\,cm^2} \times 4$ ✓ $BE = 16\,cm$ ✓ But opposite side of a rectangle are equal $\therefore \text{Perimeter} = AB + BC + CD + DE + AE$ $= 30\,cm + 38\,cm + 16\,cm + 38\,cm + 34\,cm$ ✓ $= 156\,cm$ ✓	Correct statement Correct substitution Correct squaring answer Correct answer  Correct substitution Correct answer	(6)
	3.1.3	$\text{Area of a trapezium} = \frac{1}{2}(AC + ED)h$ ✓ OR $\frac{1}{2}(AC + ED) \times CD$ $\text{Area} = \frac{1}{2}(68\,cm + 38\,cm)16cm$ ✓ $\text{Area} = \frac{1}{2}(106\,cm)16\,cm$ $\text{Area} = \frac{1696cm^2}{2}$ ✓ $\text{Area} = 848\,cm^2$ ✓ <b>OR</b>	Correct formula Correct substitution Correct division by 2 Correct answer	
		Area of trapezium $= \text{Area} = \Delta ABE + \text{Area of rectangle } BCDE$ ✓ $= \frac{1}{2}b \times h + l \times b$ ✓ $= \frac{1}{2} \times 30\,cm \times 16\,cm + 38\,cm \times 16\,cm$ ✓ $= 240\,cm^2 + 608\,cm^2$ ✓ $= 848\,cm^2$ ✓	Correct formula Correct substitution Correct addition Correct answer	(4)

3.2	3.2.1	Pentagon✓ and hexagon✓	Each correct polygon	(2)
	3.2.2	In a regular polygon all the sides and angles are equal✓ whereas an irregular polygon has either: (a) unequal angles (b) unequal sides (c) other unequal angles and unequal sides	Correct statement	(1)
	3.2.3	Circumference = $\pi d$ Diameter = $\frac{c}{\pi}$ ✓ $= \frac{68}{3,14}$ ✓ $= 21,65 \text{ cm}$ ✓	Correct formula Correct substitution Correct answer	(3)
	3.2.4	$volume = \frac{4}{3}\pi r^3$ ✓ $= \frac{4}{3}\pi(10,8225)^3$ ✓ $= 5309,72 \text{ cm}^3$ ✓	Correct formula Correct substitutions Correct answer	(3) [22]

**TOTAL: 50**