



**Adult Education and Training (AET)
Site-Based Assessment
Portfolio of Evidence**

Mathematical Literacy: NQF Level 1
Total: 50 marks
Duration: 5 hours
Task 2: Worksheet

Learner Information

Name : _____
Surname : _____
**Identity/
Passport Number** : _____
Employee Number : _____
Company : _____
Centre : _____
Date : _____

Declaration

I declare that this portfolio of evidence is my own work: _____

Signature



INSTRUCTIONS

1. This task consists of **TWO ACTIVITIES**.
2. Complete **ALL** questions in each **ACTIVITY**.
3. Learners should work on **ALL** activities individually.
4. You may use a calculator but show **ALL** your working.
5. Round off your answers to **TWO** decimal places (where necessary).
6. Write your answer in the simplest form.
7. Adhere to the numbering system used in this question paper.



ACTIVITY 1: ASSISTIVE DEVICES**1.1 The use of wheelchairs**

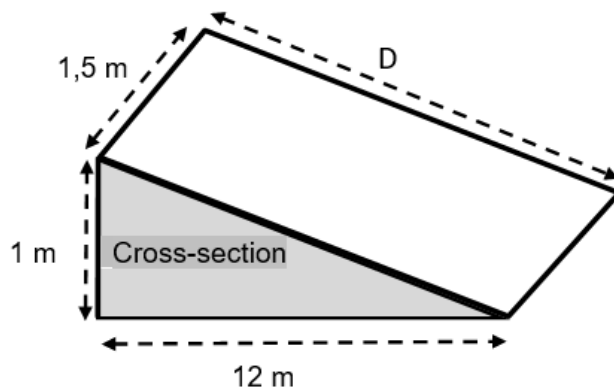
1.1.1 Zanele Situ is a disabled Olympic gold-medallist javelin champion. She threw the javelin a distance of 16,22 m in London at the 2012 Olympics. She threw the javelin to a distance of 17,90 m in Rio at the 2016 Olympics.

By what percentage did the distance increase? Use the formula:

$$\% \text{ change} = \frac{\text{Final distance} - \text{first distance}}{\text{First distance}} \times 100\%$$

(2)

1.1.2 Zanele Situ uses a manual wheelchair. Ramps are used when wheelchairs have to move from one level to another. The diagram shows the required ratio of height : horizontal distance for a manual wheelchair ramp, as 1 : 12.



(a) What is the required horizontal distance for a ramp of height 2,5 m?

(2)

- (b) Use the theorem of Pythagoras to determine D, the sloping distance of the ramp in the diagram. Give the answer in cm, rounded to the nearest whole cm.

(3)

- (c) What is the area of the shaded triangle (the cross-section of the ramp)?

Use the formula:

$$\text{Area of triangle} = \frac{1}{2} \text{ base} \times \text{perpendicular height.}$$

(2)

- (d) Determine the volume of the ramp shown in the diagram. Use the formula:

Volume of prism = area of cross-section x length of prism.

Note: the 'length' of a prism is at **right angles** to its cross-section.

(2)



- 1.1.3 Wheelchairs vary in price, depending on the specifications. Study the price list below and answer the questions.



(Source: Adobe.com)

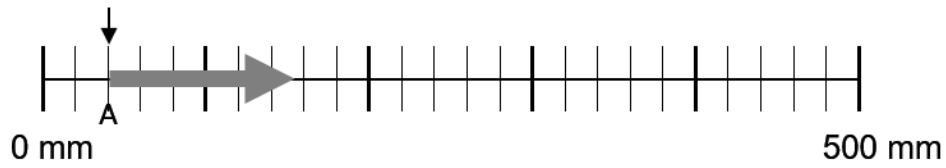
Type of wheelchair	Seat width	Price
Standard steel economy	42 cm	R1 490
Standard steel	42 cm	R1 990
Aluminium light weight	45 cm	R1 990
Deluxe aluminium light weight	45 cm	R2 399
Heavy duty wide, steel	49 cm	R2 600
Heavy duty extra wide, steel	56 cm	R3 990
Budget buddy electric	46 cm	R16 500
Deluxe electric	46 cm	R18 900

(Source: <http://www.ackermanshealth.co.za>)

- (a) **TRUE** or **FALSE**: The wider the seat, the more expensive the wheelchair. Motivate your answer.

(2)

- (b) The seat width of the standard steel wheelchair is to be marked off on the number line, starting from point A. Mark off the width using an arrow and the letter B on the ruler below.



(1)

(c) Determine the median **seat width** of the wheelchairs in the price list.

(2)

(d) Determine the modal price of the wheelchairs in the price list.

(1)

(e) Determine the range in price of the **manual** (non-electric) wheelchairs in the price list.

(2)

1.1.4 You can hire a standard steel wheelchair with a R300 deposit plus R300 monthly fee. Thuli wants to hire a wheelchair for her grandmother, who is visiting for 6 months.

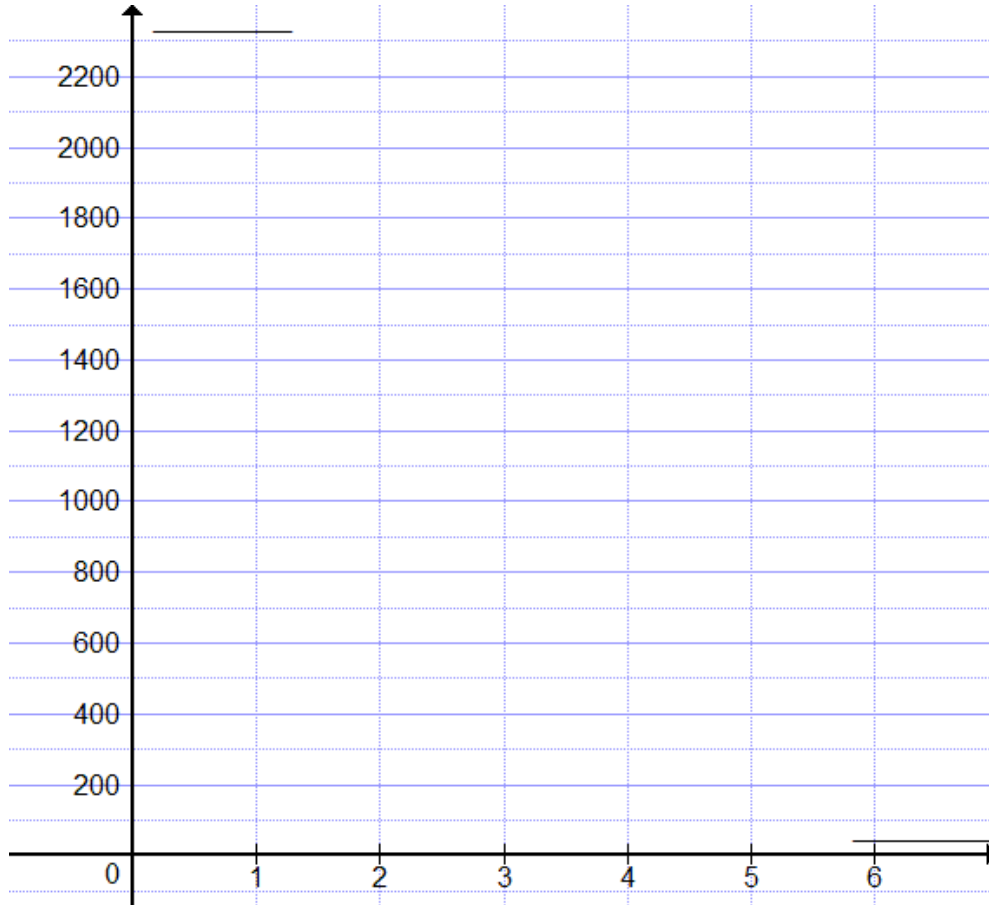
(a) Draw up a table of the cost of hiring the wheelchair for 0 months up to 6 months.

Months	0	1	2	3	4	5	6
Cost	R300						

(3)



- (b) Use your table to draw a graph showing the cost of hiring the wheelchair for 0 months up to 6 months. Label the axes.



(4)

- (c) Write a formula for the cost (**C**) of hiring a wheelchair for n months.

 (2)

- (d) Determine whether it will be cheaper for Thuli to buy a wheelchair or to hire one. Refer to the table at the beginning of question 1.1.3.

 (3)

1.2 Assistive device usage

In the 2016 census, interviews were conducted about the use of assistive devices, including walking sticks and wheelchairs. People were asked if they use the device. They could respond 'yes', 'no', or 'do not know'.

Refer to the table and answer the questions.

Census 2016	Yes	No	Do not know
Walking stick	697 444	48 916 029	26 969
Wheelchair	184 631	49 430 137	26 657

(Source: Stats SA Community Survey 2016, Table 4.2)

- (a) How many people were interviewed about the use of walking sticks?

(2)

- (b) Determine the approximate ratio of the number of people using a walking stick to the number of those using a wheelchair in 2016. Give the answer as the ratio of a whole number to 1.

Ratio = ____:1

(3)

TOTAL MARKS FOR ACTIVITY 1

(36)

ACTIVITY 2: STOPPING DISTANCE

- 2.1 When the driver of a vehicle realises that he needs to stop in case of an emergency, it takes about 1,5 seconds for him to react. During this time, the vehicle continues moving at the same speed as before. This is called the thinking distance. The table gives average stopping distances for various speeds.

Refer to the table below and answer the following questions. Show ALL calculations.

Speed	Thinking distance	Stopping distance	Total stopping distance
40km/h	17m	9m	26m
50km/h	21m	14m	35m
60km/h	25m	20m	45m
70km/h	29m	27m	A
80km/h	33m	36m	69m
90km/h	38m	B	83m
100km/h	42m	56m	98m
110km/h	C	67m	113m

(Source: <https://www.qld.gov.au/transport/safety/road-safety/driving-safely/stopping-distances/graph>)

- (a) **TRUE** or **FALSE**: The stopping distance increases as the thinking distance increases. Justify your answer.

(2)

- (b) Determine the value of A.

(2)



(c) Determine the value of B.

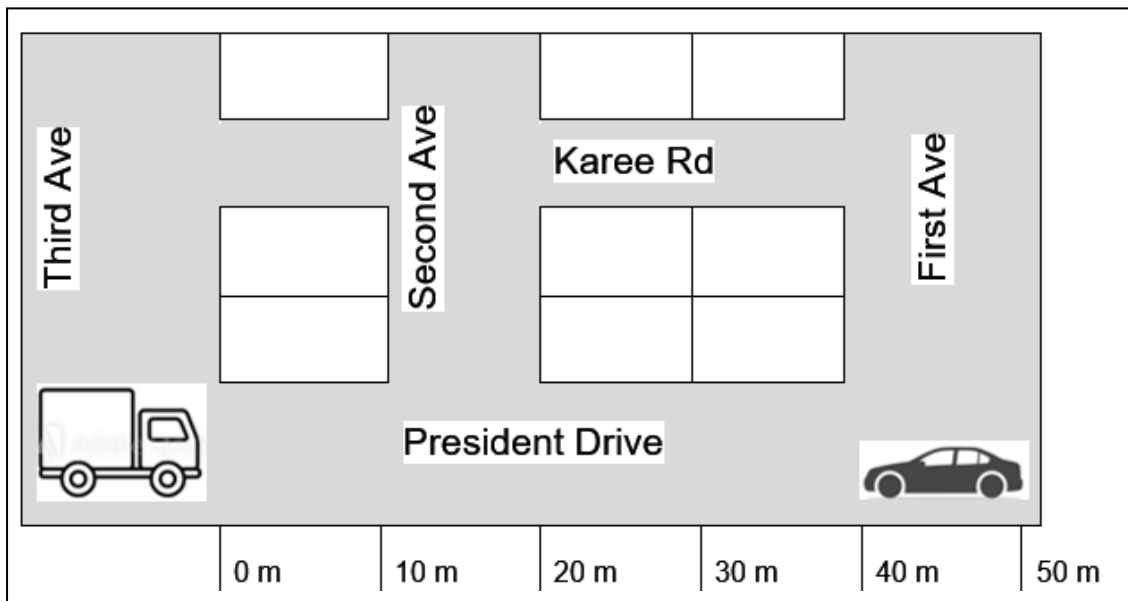
(2)

(d) Determine the value of C.

(2)

2.2 Vusi is driving along President Drive at 60 km/h as he crosses First Avenue. He sees a stationary truck in the middle of the road at the intersection of President Drive and Third Avenue.

Refer to the stopping distance table above and the map below and answer the following questions.



(Examiner's own creation)

(a) Refer to the map. Circle the correct word.

President Drive and Third Avenue are perpendicular / parallel to each other.

(1)

- (b) Refer to the map. How far is the truck from Vusi's car?

(1)

- (c) Refer to the table of stopping distances. Will Vusi be able to stop in time? He has not been drinking and the road is dry and in good condition. Justify your answer.

(2)

- (d) Describe an alternative route that motorists could use to get from the intersection of President Drive and First Avenue to the intersection of Karee Road and Third Avenue, and avoid the truck.

(2)

TOTAL MARKS FOR ACTIVITY 2

(14)

TOTAL MARKS FOR TASK 2

[50]



TOTAL FOR TASK 2: 50 MARKS

	Activity	Maximum Mark	Learner's Mark	Moderated Mark
Task 2	Activity 1	36		
	Activity 2	14		
	Total: Task 2	50		

