



# 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**

**TASK : WORKSHEET**

**DURATION : 2 HOURS**

**MARKS : 50**

**This assessment task consists of 6 pages.**



**INSTRUCTIONS AND INFORMATION**

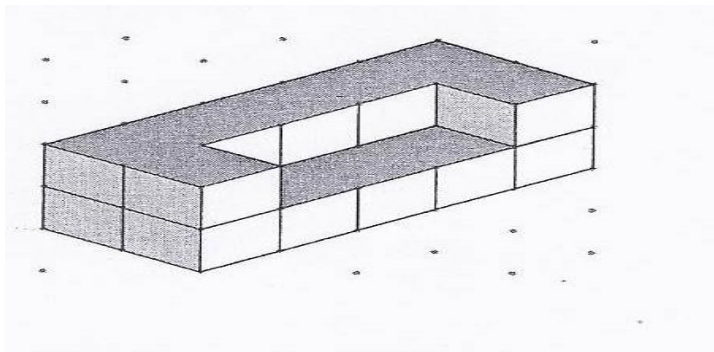
1. Answer ALL the questions on this WORKSHEET and hand in the completed task.
2. Write the CENTRE and your NAME in the spaces provided.
3. Calculators may be used unless otherwise stated.
4. Show ALL calculations.
5. Write legible and present your work clearly.

**CENTRE:** \_\_\_\_\_

**NAME:** \_\_\_\_\_

**ACTIVITY 1**

- 1.1 A shop that sells second hand furniture sells coaches made out of foam-rubber rectangular prisms. The diagram below shows their three seat design couch which uses 17 rectangular prisms to make.



- 1.1.1 Copy and complete the table below

Number of seats in couch ( $n$ )	1	2	3	4	5
Number of rectangular prisms( $c$ )			17		

(4)

- 1.1.2 Describe the rule in words.

.....

.....

(2)

- 1.1.3 The general term of the pattern is given as  $T_n = a + (n - 1)d$ , where  $d$  is the common difference,  $a$  is the first term and  $n$  is the number of terms. Use the values in the table in QUESTION 1.1.1 to calculate the following:

$$d = T_2 - T_1$$

---



---

$$d = T_4 - T_3$$

---



---

(2)

- 1.1.4 Using the completed table in QUESTION 1.1.1, write down the value of  $a$  (which is the first term).

---



---

(1)

- 1.1.5 Find the general rule using the formula  
 $T_n = a + (n - 1)d$

---



---



---

(3)

- 1.1.6 Determine how many rectangular prisms will be needed to make the 13<sup>th</sup> seater design couch.

---



---



---

(3)

- 1.1.7 What number of seats can a couch have if you use 128 rectangular prisms?

---



---



---

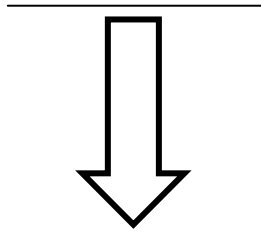
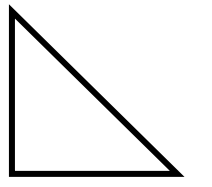
(3)

**[18]**

**ACTIVITY 2**

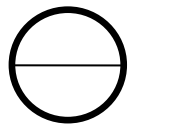
- 2.1 Transformation means the changes in position or sizes of shapes. Translation, Reflection, Rotation and Enlargement are the examples of geometric transformation. Transformations are useful in our everyday lives, like to see shapes differently especially in the field of architecture and engineering.

- 2.1.1 Draw a reflection of the following figures along the given lines.



(4)

- 2.1.2 The circle below has a diameter of 2 cm draw an **enlargement** of the figure that has a diameter of 4 cm.

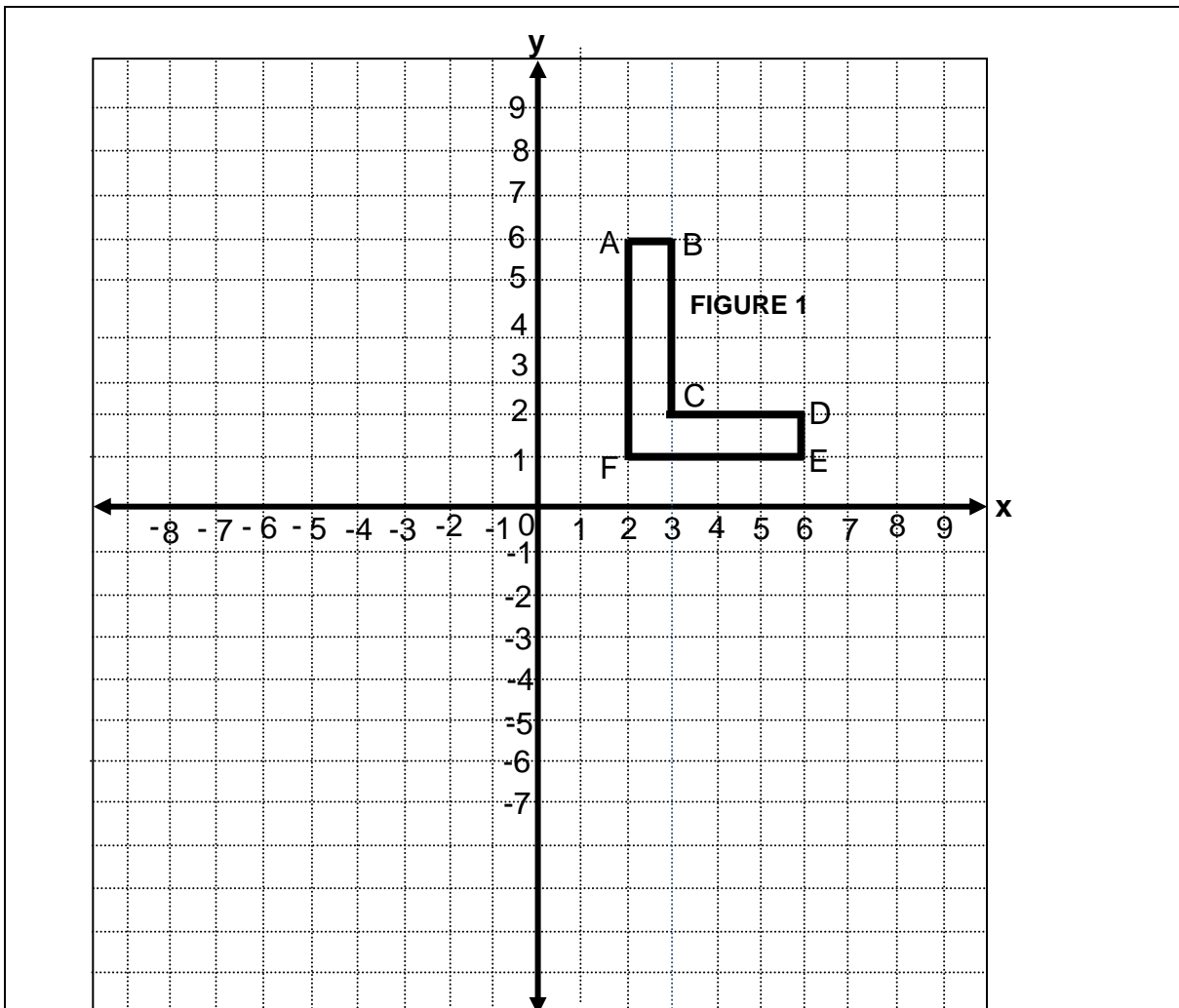


(2)

2.2 Look at the figure 1 below

2.2.1 In the graph below **translate** the Figure 1, by 6 units to the left and 4 units downward and name it Figure 2.

(4)



2.2.2 Write down the coordinates of the image of Figure 2

$A' =$

$B' =$

$C' =$

$D' =$

$E' =$

$F' =$

(6)

2.2.3 Rotate Figure 1,  $90^\circ$  clockwise about point F and name it Figure 3

(4)

[20]

**ACTIVITY 3**

3.1 The speed of a moving object is the rate at which it covers a certain distance per time unit. The formula for speed is  $S = \frac{D}{T}$  where D represents the distance that an object moves in a time (T).

3.1.1 What is an average speed of a car that travels a distance of 450 *km* in 3 hours 40 minutes?

---

---

---

---

---

(5)

3.1.2 In what time will a taxi travel a distance of 150*km* at an average speed of 90*km/h*?

---

---

---

---

---

---

---

(5)

3.1.3 What do you think happens to time when the car is travelling at high speed?

---

---

---

(2)  
[12]**TOTAL: 50**