higher education & training
Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

Tshwane South TVET College
"achieve the future"

SUBJECT: FOUNDATIONAL MATHS

LEVEL: PLP

MODULE/CHAPTER NO: MODULE 3

UNIT 3: CALCULATE THE AREA OF TWO-DIMENSIONAL SHAPES

UNIT 3: CALCULATE THE AREA OF TWO-DIMENSIONAL SHAPES

After completing this topic, you will be able to:

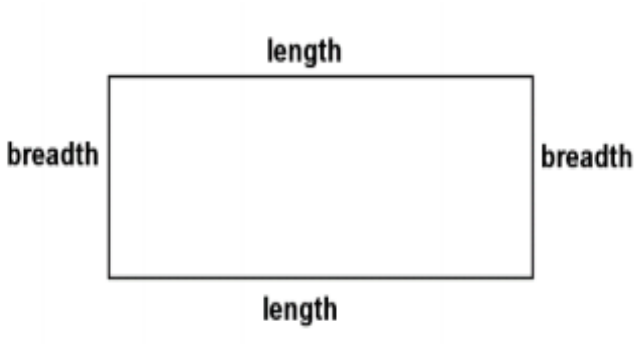
1. Know what area is

2. Calculate the area of a

a. Rectangle
b. Square
c. Triangle
d. Circle (circumference)
e. Trapezium
f. Parallelogram

UNIT 3: CALCULATE THE AREA OF TWO-DIMENSIONAL SHAPES

3.1 Area of a Rectangle



The area is calculated by using the following formula:

Area = $length \times breadth$ or just $A = l \times b$

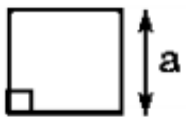
Example

A rectangle is $6\ m$ wide and $3\ m$ high, what is its area?

$$\text{Area} = l \times b$$
$$= 6 \times 3$$
$$= 18\ m^2$$

3.2 Area of a Square

The area is the side length squared:



Area $= a \times a = a^2$

Example

A square has a side length of $6\ m$, what is its area?

Area $= a \times a = 6 \times 6 = 36\ m^2$

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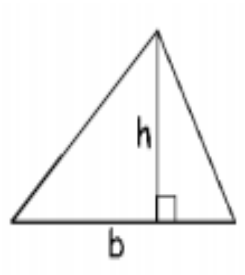
3.3 Area of a Triangle

The area is **half of the base times height**.

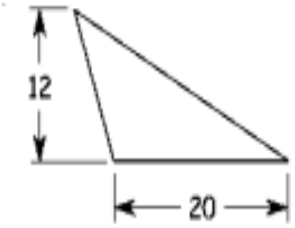


- "*b*" is the distance along the base
- "*h*" is the height (measured at right angles to the base)

$$\text{Area} = \frac{1}{2} \times b \times h$$

Example:

What is the area of this triangle?



(Note: 12 is the **height**, not the **length** of the left-hand side)

$$\text{Height} = h = 12\ m$$

$$\text{Base} = b = 20\ m$$

$$\text{Area} = \frac{1}{2} \times b \times h$$

$$= \frac{1}{2} \times 20 \times 12$$

$$= 120\ m^2$$