**Unit 15: Measurement – Length and Area**

**Section A: Circumference**

**Short-answer questions**

**Instructions to students**
- This section is designed to help you to both improve your skills and increase your speed in measuring the circumference of a round object.
- Read the following questions and answer all of them in the spaces provided.
- No calculators.
- You will need to show all working.

\[ C = \pi \times d \]
where: \( C = \) circumference, \( \pi = 3.14 \) and \( d = \) diameter

**EXAMPLE**

Find the circumference of a plate with a diameter of 300 mm.

\[ C = \pi \times d \]
Therefore, \( C = 3.14 \times 300 \)
\[ = 942 \text{ mm} \]

**QUESTION 1**

Find the circumference of a warehouse light fitting with a diameter of 600 mm.

**Answer:**
1884 mm

**QUESTION 2**

Calculate the circumference of a pulley with a diameter of 150 mm.

**Answer:**
471 mm

**QUESTION 3**

Determine the circumference of a store light fitting with a diameter of 320 mm.

**Answer:**
1004.8 mm

**QUESTION 4**

Find the circumference of a conduit with a diameter of 50 mm.

**Answer:**
157 mm

**QUESTION 5**

Calculate the circumference of a heat pump pipe with a diameter of 120 mm.

**Answer:**
376.8 mm

**QUESTION 6**

Determine the circumference of a spotlight fitting with a diameter of 288 mm.

**Answer:**
904.32 mm

**QUESTION 7**

Find the circumference of a car speaker hole with a diameter of 156 mm.

**Answer:**
489.84 mm
QUESTION 8

Determine the circumference of a 1200 W sander with a diameter of 143 mm.

Answer:
449.02 mm

QUESTION 9

Find the circumference of an industrial pulley with a diameter of 429 mm.

Answer:
1347.06 mm

QUESTION 10

Calculate the circumference of a 50 W floodlight with a diameter of 188 mm.

Answer:
590.32 mm

Section B: Diameter

Short-answer questions

Instructions to students
- This section is designed to help you to both improve your skills and increase your speed in measuring the diameter of a round object.
- Read the following questions and answer all of them in the spaces provided.
- No calculators.
- You will need to show all working.

Diameter (D) of a circle = \( \frac{\text{circumference}}{\pi} \)

EXAMPLE

Find the diameter of a conduit with a circumference of 800 mm.

\[
D = \frac{800}{3.14} = 254.77 \text{ mm}
\]

QUESTION 2

Calculate the diameter of a ceiling hole for a light with a circumference of 160 mm.

Answer:
50.96 mm

QUESTION 3

Determine the diameter of a CCTV camera head with a circumference of 200 mm.

Answer:
63.69 mm
**QUESTION 4**
Find the diameter of a cable drum with a circumference of 785 mm.

**Answer:**
250 mm

**QUESTION 5**
Calculate the diameter of a floodlight with a circumference of 500 mm.

**Answer:**
159.2 mm

**QUESTION 6**
Determine the diameter of a fuel tank with a circumference 11.8 m.

**Answer:**
3.76 m

**QUESTION 7**
Find the diameter of a pipe with a circumference of 1244 mm.

**Answer:**
39.5 mm

**QUESTION 8**
Calculate the diameter of a warehouse light fitting with a circumference of 908 mm.

**Answer:**
289.2 mm

**QUESTION 9**
Determine the diameter of a cog with a circumference of 623 mm.

**Answer:**
198.4 mm

**QUESTION 10**
Find the diameter of a storeroom light fitting with a circumference of 688 mm.

**Answer:**
219.1 mm

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**Section C: Area**

**Short-answer questions**

**Instructions to students**

- This section is designed to help you to both improve your skills and increase your speed in measuring surface area.
- Read the following questions and answer all of them in the spaces provided.
- No calculators.
- You will need to show all working.

**Area**

= length × breadth and is given in square units

= \( l × b \)

**QUESTION 1**
An electrician needs to transport trunking in his trailer. The length of the electrician’s trailer is 1.8 m by 1.2 m wide. What is the total floor area?

**Answer:**
2.16 m²
QUESTION 2
If an electrical workshop measures 60 m by 13 m, what is the total area?
Answer:
780 m²

QUESTION 3
A light switch cover is 128 mm by 128 mm. What is its total area?
Answer:
16384 mm²

QUESTION 4
If a switchboard measures 4.5 m by 3.8 m, what is its total area?
Answer:
17.1 m²

QUESTION 5
A fan control panel measures 120 mm by 100 mm, what is the total area?
Answer:
12000 mm²

QUESTION 6
A battery has plates inside of it that measure 155 mm by 128 mm. What is the total area of one plate?
Answer:
19840 mm²

QUESTION 7
The dimensions of the floor of an electrician’s van are 1.06 m by 1.07 m. What is the total area?
Answer:
1.13 m²

QUESTION 8
An electrical warehouse storage area is 65.3 m by 32.7 m. How much floor area is there?
Answer:
2135.31 m²

QUESTION 9
If the floor of a garage is 3.2 m wide by 8.6 m long, what is its area?
Answer:
27.52 m²

QUESTION 10
An electrical spare parts delivery truck is 8.9 m long and 2.6 m wide. How much floor area can it accommodate?
Answer:
23.14 m²