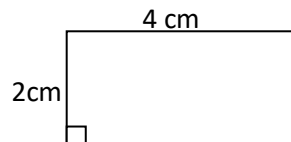


2018
TERM 3
ASSIGNMENT
MEMO GRADE 8

SECTION A: MULTIPLE CHOICE {MARKS: 10}

Encircle the letter of the correct answer.

Use the rectangle below to answer question 1 to 3.



1. Calculate the perimeter.
A. 8 cm
B. 8 cm²
C. 12 cm²
D. 12 cm ✓ (1)
2. Calculate the area.
A. 8 cm
B. 8 cm² ✓
C. 12 cm²
D. 12 cm (1)
3. If the dimensions of both sides of the rectangle are doubled, the area of the new rectangle would be
A. 2 × area of the original rectangle.
B. 4 × area of the original rectangle. ✓
C. 6 × area of the original rectangle.

- D. same as the original rectangle. (1)
4. If the perimeter of a square is 80 mm , the length of each side is ...
 A. 40 mm B. 320 mm
 (C) 20 mm ✓ D. 80 mm (1)
5. Convert 650 mm^2 to cm^2 .
 A. 65 cm^2 (B) $6,5\text{ cm}^2$ ✓
 C. $0,65\text{ cm}^2$ D. $0,065\text{ cm}^2$ (1)
6. If the diameter of a circle is $(2x + 4)$, then the area of the circle in terms of x is:
 A. $\pi(x^2 + 4)$ B. πx^2
 (C) $\pi(x^2 + 4x + 4)$ ✓ D. $\pi(2x + 4)^2$ (1)
7. Which of the following rules cannot be used to calculate the perimeter (P) of a rectangle?
 A. $P = 2l + 2b$ B. $P = 2(l + b)$
 C. $l + b + l + b$ (D) $l + b$ ✓ (1)
8. Convert $0,017\text{ km}^2$ to m^2 .
 (A) $17\ 000\ \text{m}^2$ ✓ B. $170\ 000\ \text{m}^2$
 C. $1\ 700\ \text{m}^2$ D. $170\ \text{m}^2$ (1)
9. Which of the following rules can be used to calculate the area of the kite?
 A. $A = \frac{1}{2}(b \times h)$ (B) $A = \frac{1}{2}(\text{diagonal}_1 \times \text{diagonal}_2)$ ✓
 C. $A = \frac{1}{2}(\text{diagonal}_1 + \text{diagonal}_2)$ D. $A = l \times b$ (1)
10. Convert 93 mm^2 to m^2 .
 (A) $0,000093\ \text{m}^2$ ✓ B. $0,0093\ \text{m}^2$
 C. $0,00000093\ \text{m}^2$ D. $0,93\ \text{m}^2$ (1)

SECTION B: {MARKS: 40}

1. If the length of a rectangle is 10 cm and the breadth is half of the length, calculate
 a) The perimeter of the rectangle.

$$\begin{aligned}
 P &= 2(l + b) \checkmark \\
 &= 2(10\text{ cm} + 5\text{ cm}) \checkmark \\
 &= 2(15\text{ cm}) \\
 &= 30\text{ cm} \checkmark
 \end{aligned}$$

(3)

b) The area of the rectangle.

$$A = l \times b \checkmark$$

$$= 10 \text{ cm} \times 5 \text{ cm} \checkmark$$

$$= 50 \text{ cm}^2 \checkmark$$

(3)

2. If a square has an area of 625 square units, determine

a) The length of a side.

$$s^2 = 625 \checkmark$$

$$\therefore s = 25 \text{ Units} \checkmark$$

(2)

b) The perimeter of the square.

$$P = 4s$$

$$= 4 \times 25 \checkmark$$

$$= 100 \text{ Units} \checkmark$$

(2)

3. Given a circle with radius 4 mm, calculate (use $\pi = 3,14$)

a) The perimeter/circumference rounding off to one decimal place.

$$C = 2\pi r \checkmark$$

$$= 2(3,14)(4 \text{ mm}) \checkmark$$

$$= 25,12 \text{ mm} \checkmark$$

(3)

b) The area, rounding off to one decimal place.

$$A = \pi r^2 \checkmark$$

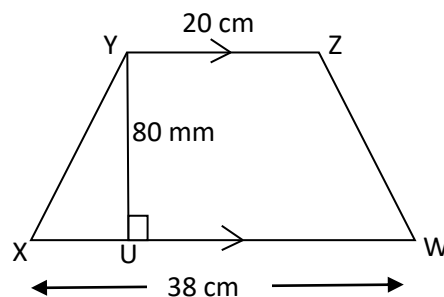
$$= \pi(4 \text{ mm})^2 \checkmark$$

$$= 50,24 \text{ mm}^2 \checkmark$$

(3)

4. Calculate the area of each of the following shapes: (Give your answers in cm^2)

a)



$$\text{AREA of trapezium WXYZ} = \frac{1}{2}(\text{Sum of parallel sides}) \times \text{height} \checkmark$$

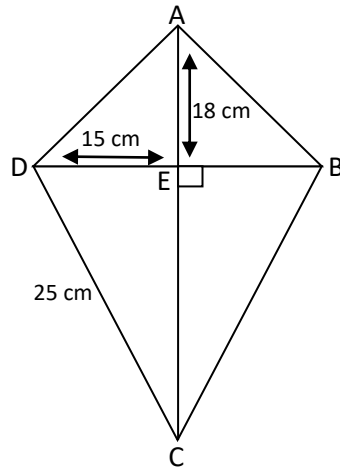
$$= \frac{1}{2}(38 \text{ cm} + 20 \text{ cm}) \times 8 \text{ cm} \checkmark$$

$$= \frac{1}{2}(58 \text{ cm}) \times 8 \text{ cm} \checkmark$$

$$= 232 \text{ cm}^2 \checkmark$$

(4)

b)



$$EC = 20 \text{ cm} \checkmark \quad (\text{pythag. triple } 3:4:5 = 15:20:25) \checkmark$$

$$\therefore AC = 18 \text{ cm} + 20 \text{ cm} = 38 \text{ cm} \checkmark$$

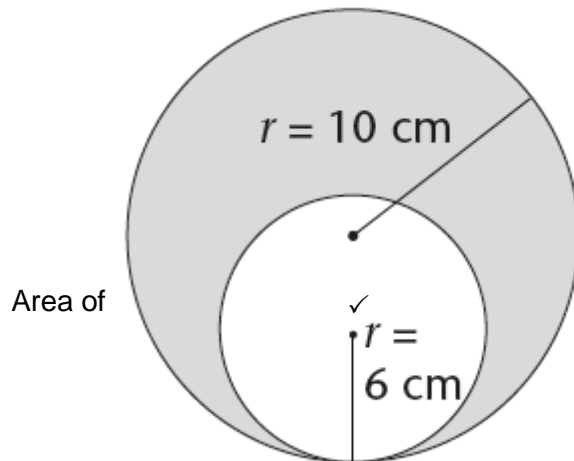
$$\text{Area of a kite} = \frac{1}{2}(AC \times BD) \checkmark$$

$$= \frac{1}{2}(38 \text{ cm} \times 30 \text{ cm})$$

$$= 570 \text{ cm}^2 \checkmark$$

(6)

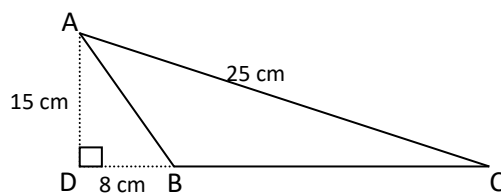
5. Calculate, correct to two decimal places, the area of the shaded part of the diagram below: (Use $\pi = 3,14$)



$$\begin{aligned} \text{Area of small circle} &= \pi r^2 \\ &= 3,14 \times (6 \text{ cm})^2 \checkmark \\ &= 3,14 \times 36 \text{ cm}^2 \\ &= 113,04 \text{ cm}^2 \checkmark \end{aligned}$$

$$\text{Area of the shaded part} = 314 \text{ cm}^2 - 113,04 \text{ cm}^2 = 200,96 \text{ cm}^2 \checkmark \quad (6)$$

6. Refer to the diagram below, and calculate:



- a) The length of BC.

$$\begin{aligned} \text{In } \triangle ACD, \quad CD^2 &= (25 \text{ cm})^2 - (15 \text{ cm})^2 \checkmark && \text{(Pythag.)} \\ &= 625 \text{ cm}^2 - 225 \text{ cm}^2 \\ &= 400 \text{ cm}^2 \checkmark \\ \therefore CD &= 20 \text{ cm} \checkmark \\ \therefore BC &= 20 \text{ cm} - 8 \text{ cm} \checkmark \\ &= 12 \text{ cm} \checkmark \end{aligned}$$

(5)

b) The area of ΔABC .

$$\text{Area of } \Delta ABC = \frac{1}{2}(b \times h) \checkmark$$

$$= \frac{1}{2}(12 \text{ cm} \times 15 \text{ cm}) \checkmark$$

$$= 90 \text{ cm}^2 \checkmark$$

(3)

END