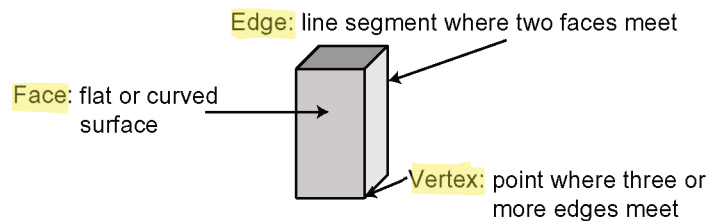


Unit 2: Surface Area
2.3A Area & Circumference Review

Three-Dimensional Objects

You can describe a three-dimensional (3-D) object by counting its **faces**, **edges**, and **vertices**.



1. Identify the name and the number of faces, edges, and vertices for each object.

Object	Name	Faces	Edges	Vertices
a) 	Rectangular Prism	6	12	8
b) 	Triangular Prism	5	9	6
c) 	cube	6	12	8

Circles

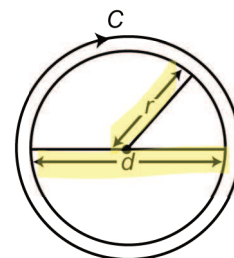
A **circle** is a set of points that are an equal distance away from a fixed point, called the **centre**.

The **radius** is the distance from the centre of a circle to the outside edge. The letter r is often used to represent the radius.

The **diameter** is the distance across a circle through its centre. The letter d is often used to represent the diameter.

The distance around a circle is called the **circumference**. The letter C is often used to represent the circumference.

The diameter is two times the radius: $d = 2r$.
 The radius is half the diameter: $r = d \div 2$.



perimeter - distance around a closed 2-D shape
 To find the **circumference** of a circle, use the formula $C = \pi \times d$ or $C = 2 \times \pi \times r$. Use 3.14 as an approximate value for π .

$$C = \pi \times d$$

$$C \approx 3.14 \times 10$$

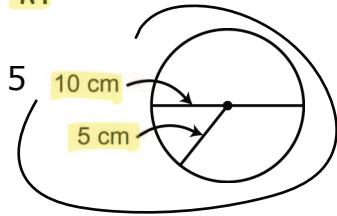
$$C \approx 31.4$$

The circumference is 31.4 cm.

$$C = 2 \times \pi \times r$$

$$C \approx 2 \times 3.14 \times 5$$

$$C \approx 31.4$$



The **area**, A , of a circle is the space the circle encloses.

To find the area of a circle, use the formula $A = \pi \times r^2$ or $A = \pi r^2$

$$A = \pi \times r^2 = \pi \times 5^2$$

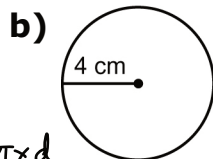
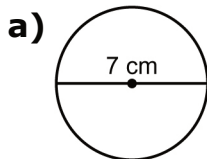
$$A \approx 3.14 \times 5 \times 5 \leftarrow$$

$$A \approx 78.5$$

The area is 78.5 cm².

r^2 means $r \times r$

2. Find the circumference of each circle to the nearest tenth of a centimetre.



$$C = 2 \times \pi \times r$$

$$= 2 \times 3.14 \times 4$$

$$= 25.12 \text{ cm}$$

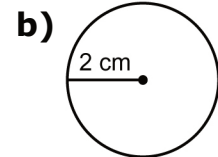
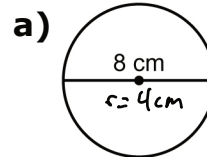
Area Formulas

$$C = \pi \times d$$

$$= 3.14 \times 7$$

$$= 21.98 \text{ cm}$$

3. Find the area of each circle to the nearest tenth of a centimetre.



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

$$= \pi \times 2^2$$

$$= 3.14 \times 4$$

$$= 12.56 \text{ cm}^2$$

$$A = \pi \times r^2 = 3.14 \times 4^2$$

$$= 50.24 \text{ cm}^2$$

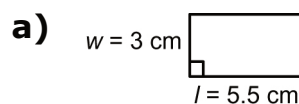
The **area** is the number of square units needed to cover a surface.

Use the formulas to calculate the area of these shapes to the nearest tenth of a centimetre.

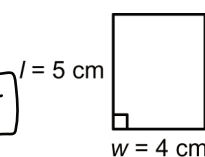
4. Rectangle:

$$A = l \times w$$

$$A = lw$$



b) $A = 3 \times 5.5$
 $= 16.5 \text{ cm}^2$

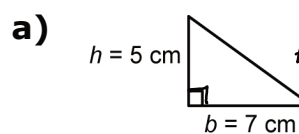


$A = 5 \times 4$
 $= 20 \text{ cm}^2$

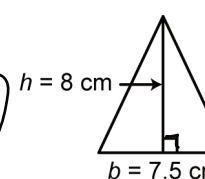
5. Triangle:

$$A = (b \times h) \div 2$$

$$A = \frac{bh}{2}$$



b) $A = 5 \times 7 \div 2$
 $A = 17.5 \text{ cm}^2$

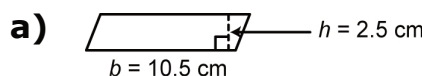


$A = 8 \times 7.5 \div 2$
 $= 30 \text{ cm}^2$

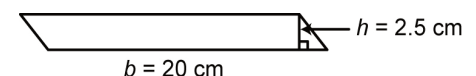
6. Parallelogram:

$$A = b \times h$$

$$A = bh$$



$A = 10.5 \times 2.5$
 $= 26.25 \text{ cm}^2$



$A = 20 \times 2.5$
 $= 50 \text{ cm}^2$

Practice: WS2.3A - **work on separate sheet, show your work**