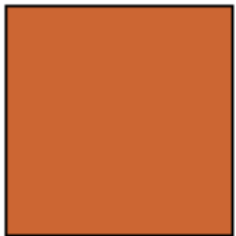# STUDY GUIDE FOR AREA, PERIMETER, VOLUME AND SURFACE AREA
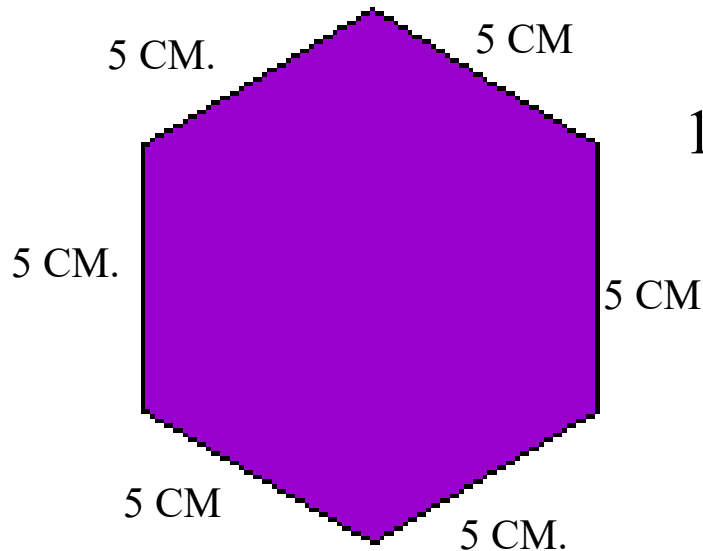
FOR: MRS. GOODHUE'S CLASS

BY: MRS. CAMUTO

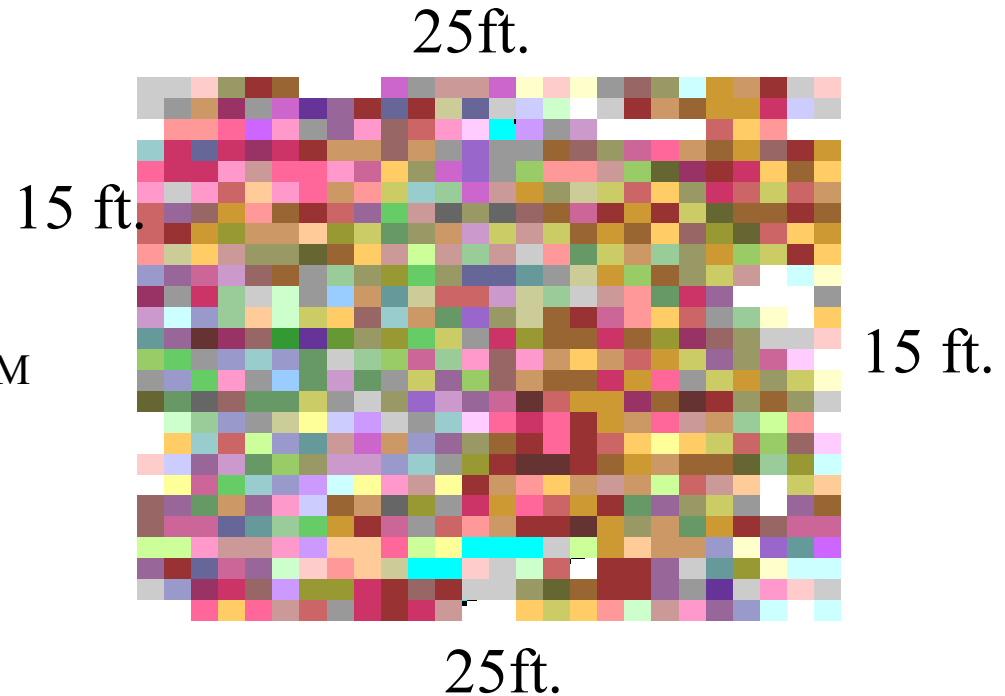# PERIMETER

- **PERIMETER –**
- ➢ This is the distance around the outside of a figure.
- ➢ To find this, you simply **ADD UP ALL THE SIDES**!

5 CM.   5 CM

5 CM.   5 CM

5 CM   5 CM.

25ft.

15 ft.   15 ft.

25ft.

P = 5+5+5+5+5+5+5

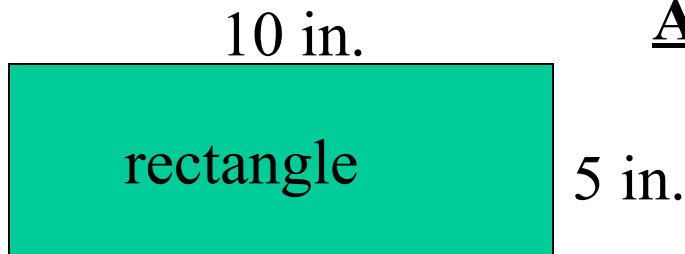P = 30 cm.

P = 15 +15+25+25

P = 80 ft.

AREA

(label is always squared / raised to the 2nd. power

- **AREA –**

- This is the distance covering the **ENTIRE INSIDE AREA OF A SHAPE**

- EACH SHAPE has it's own formula for finding area.
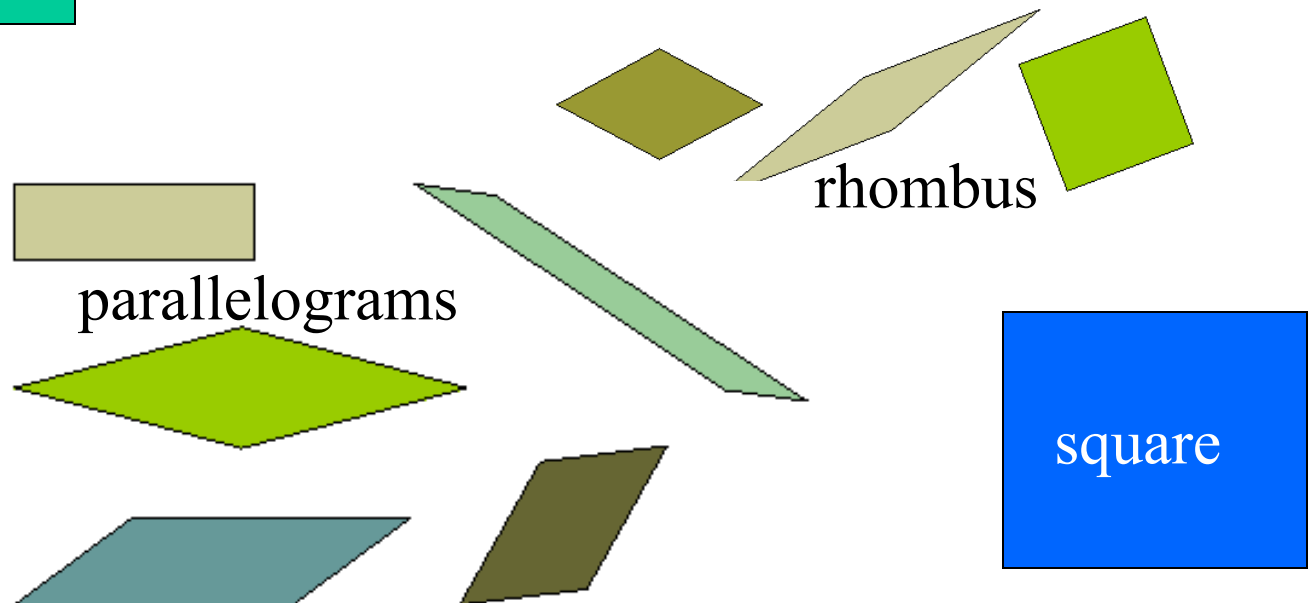
ALL FOUR OF THESE FIGURES USE

10 in.

rectangle

5 in.

Area = base X height   or   A = b h

$A = b \times h$

$A = 10 \times 5$

$A = 50$ sq. in.

parallelograms

rhombus

square

AREA OF A TRAPEZOID

- ALL THREE of these are TRAPOZOIDS because they have ONE SET of PARALLEL SIDES!

- The formula is:
  $$A = \frac{1}{2} h (b1 + b2)$$
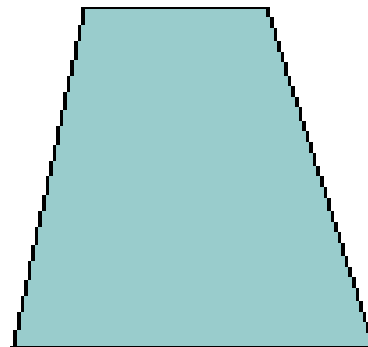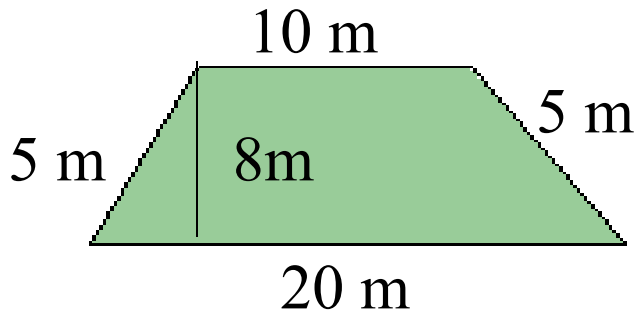
$A = \frac{1}{2} h (b1 + b2)$

$A = \frac{1}{2} \; 8 (20 + 10)$

$A = 4 (30)$

$A = 120$ sq. m.

10 m

5 m

8m

5 m

20 m

AREA OF A TRIANGLE

8 cm = b

10 cm.

a = 12 cm.

c = 15 cm

A

B

C

- **AREA –**

The formula for finding the area of a triangle is:

A = ½ b x h

A = ½ (15 x 10)

A = ½ (150)

A = 75 sq. cm.
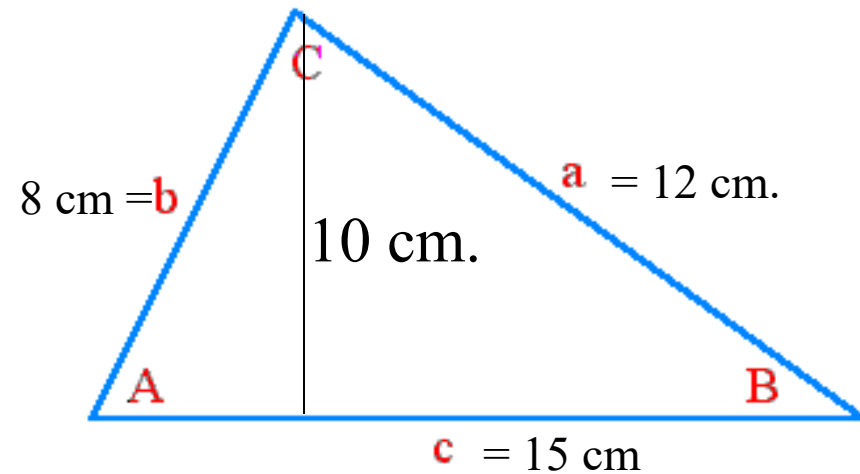
REMEMBER: to find a ½ of a number all you need to do is divide by 2.
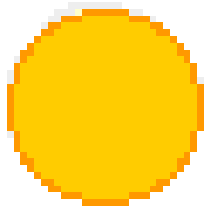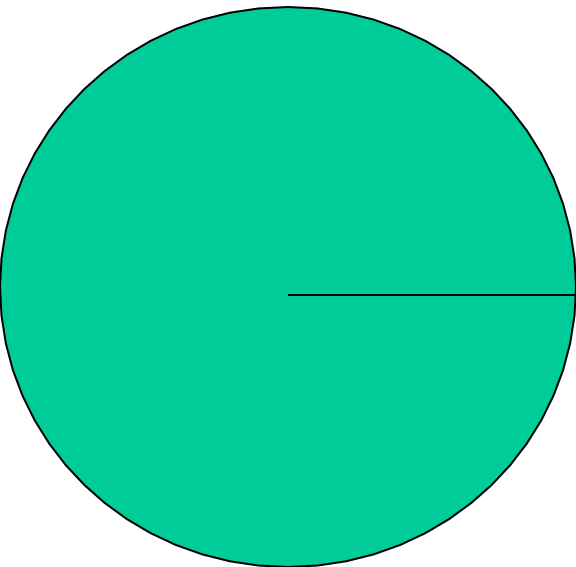
PARTS OF A CIRCLE!
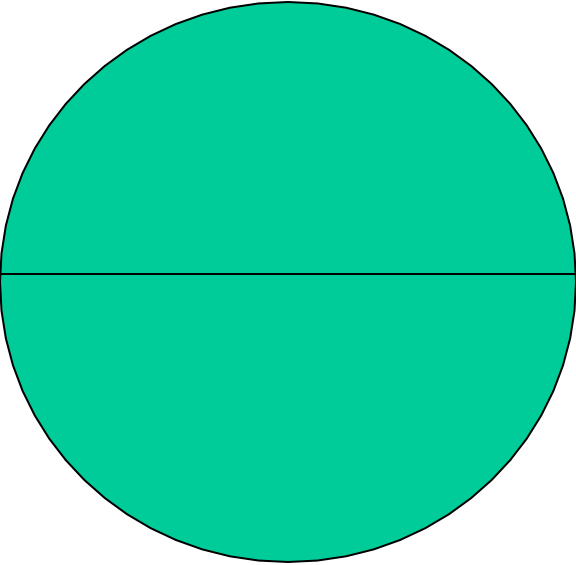
DIAMETER

DIAMETER -
this is the distance ALL the way across a circle.

RADIUS -
This is ½ the distance across a circle.
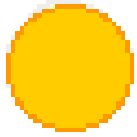You can find this by dividing the diameter by 2.

Pi = 3.14

RADIUS =

½ the diameter

KNOW THESE FORMULAS –

CIRCUMFRANCE - C = Pi X d

2

AREA - A = Pi X r

HOW TO FIND CIRCUMFRANCE AND AREA OF A CIRCLE!

4 mm

16 mm
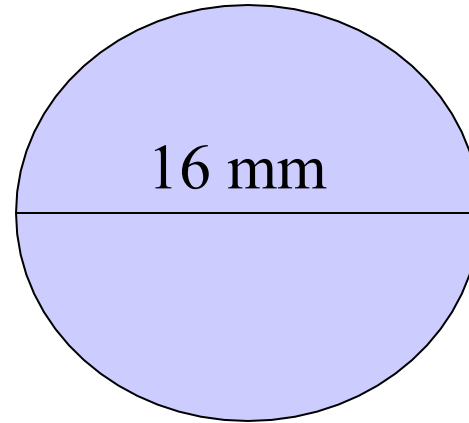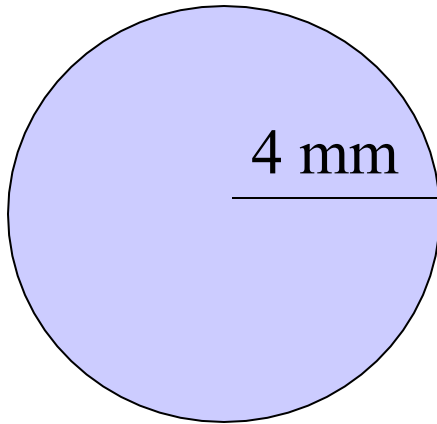
Finding the circumference -

C = Pi X d

C = 3.14 X 8

C = 25.12 mm

Finding the area –

A = Pi X r squared

A = 3.14 X 8 X 8

A = 3.14 X 64

A = 200.96 sq. mm.

DILATIONS

3mm   4mm

4mm   2.5mm

5mm

- This is when a picture is made either larger or smaller.
- Number bigger than 1 – the figure will be larger.
- Number smaller than 1 – the figure will be smaller.
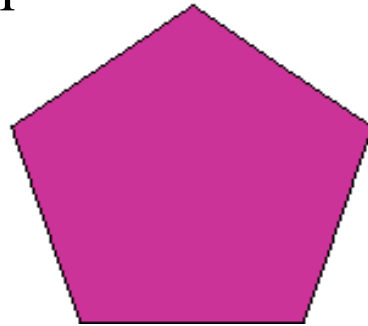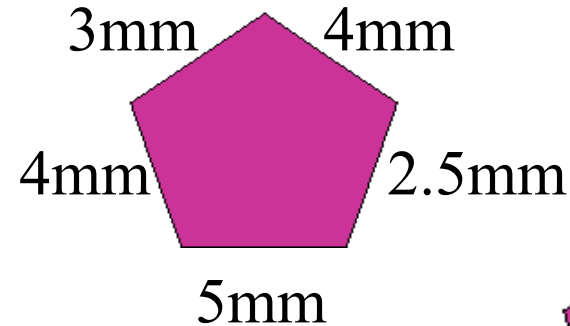
Scale Factor = 3

TO FIND THE VALUE OF THE SIDES OF THE NEW FIGURE:

(take each side and multiply it by the scale factor)
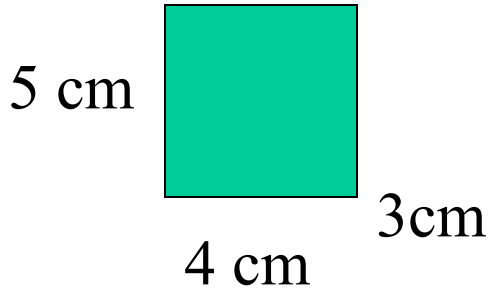
EXAMPLE: 4 mm   X 3

new side = 12 mm

Can you find the length of the rest of the sides?

TO FIND THE SIZE OF THE NEW FIGURE, MULTIPY EACH SIDE BY THE GIVEN SCALE FACTOR.

SURFACE AREA

5 cm

3cm

4 cm

- This is where you find the AREA of EACH face (side) of a figure and then ADD them all together.

(front and back)	(bottom and top)	(2 sides)	20
A = b X h	A = b X h	A = b X h	20
A = 5 X 4	A = 4 X 3	A = 5 X 3	12
A = 20 sq. cm.	A = 12 sq. cm.	A = 15 sq. cm.	12
			15

TO FIND THE TOTAL SURFACE AREA -

+   15

94 sq. cm.

VOLUME

2 in.

3 in.

(the capital B stands for the area of the base)

V = B h ⟶ B = Pi X r squared

B = 3.14 X 3 X 3

V = 28.26 X 2   B = 3.14 X 9

V = 56.52 cubic in.   B = 28.26 sq. in.
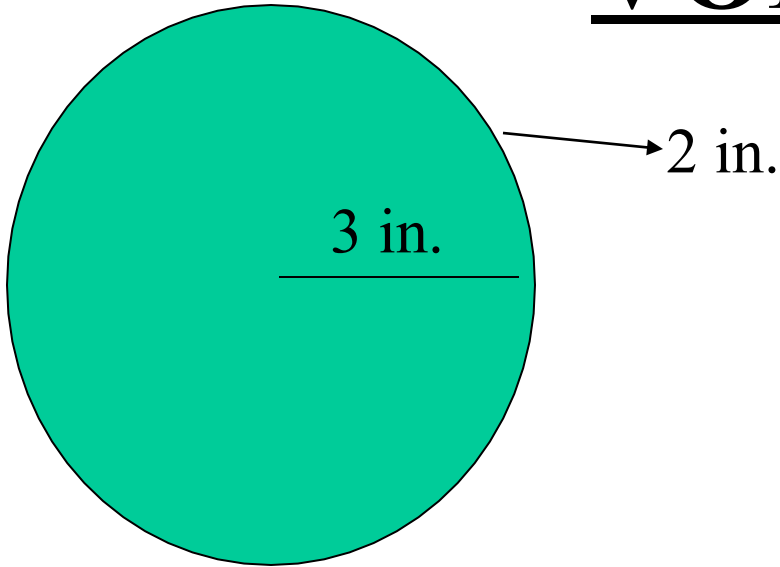
- Use the formula
  V = B X h

B is the AREA of the base.

You need to find area of the base first.