**SOLID FIGURES**

Edges

Vertices

**Parts:**

Faces

**Faces** are the blank sides of the area.

**Vertices** are the corners connecting the edges

**Edges** are the line segments lining the faces

**Prism’s**

A prism has a uniform cross section.

**Cylinder**

A cylinder has no vertices nor’ edges.

**SURFACE AREA**

Surface area is the sum of the face’s area

SURFACE AREA OF A PRISM

5 cm

5cm

5cm x 5cm = 25cm

25cm x (the number of faces with the same area) =

25 x 6 = 150cm

Answer: 150cm2 (always raised to the second power)

(FOR MORE EXAMPLES PLEASE GO TO PAGE 268 – 269)

SURFACE AREA OF THE CYLINDER

Equation:

$$\left(2 x π x r x h\right)+(2 x π x r^{2}) $$

2 cm

5 cm

$$\left(2 x 3.14 x 2 x 5\right)+ \left(2 x 3.14 x 4\right)$$

$$62.8+10.28=73.08cm^{2}$$

**VOLUME**

Volume is how much unit’s can fit inside a solid figure

**Equations for volume:**

$$RECTANGULAR PRISM:L x W x H$$

$$CUBE:sides^{3}$$

$$CYLINDER: π x r^{2} x h$$

$$PYRAMID:\frac{1}{3 } x \left(base 1 x base 2\right) x h$$

$$CONE: \frac{1}{3} x π x r^{2} x h$$

$$SPHERE: \frac{4}{3} x π x r^{3}$$

**SERIES OF OPERATIONS**

**(GEMDAS)**

For addition and subtraction: always follow from left to right

For multiplication and division: do these first. If you encounter an equation which includes these two, follow from left to right (skipping addition and subtraction)

Example:

5 + 3 x 2 – 4 = n

Try using grouping symbols to make your life easier:

5 + (3 x 2) – 4 = n (than just copy the numbers left. Multiplication should ALWAYS be solved before addition and subtraction.

5 + 6 – 4 = n (since it’s left with addition and subtraction, you just follow it from left to right)

11 – 4 = 7

Another Example:

$$25 ÷5+4 x 6= $$

Using grouping symbols:

$\left(25 ÷5\right)+ (4 x 6)$ = n (since division is before multiplication do that first.

Our answer is: **29**

**EXPONENTS:**

52 = FIVE is what you call the base. TWO is what you call the exponent

The base is the one which is being multiplied

The exponent is the number of times you have to multiply the base

**Terms:**

1. Product rule: the product rule helps make it easier multiplying and dividing
* THE BASE MUST BE THE SAME

$$\frac{5^{5} x 5^{3} }{5^{8}} they have the same base.$$

55 = 5 x 5 x 5 x 5 x 5 =

(Combine them together)

53 = 5 x 5 x 5 =

All you have to do it add the exponents together = 58

And since you have to divide 58 from 58

All you have to do is minus the exponents = 0

**ALL ZERO EXPONENTS MEANS THE BASE IS EQUAL TO ONE**

1. Quotient rule: this rule makes dividing exponents much easier
* THE BASE MUST BE THE SAME

$$\frac{7^{2}}{7^{8}}$$

 All you have to do is minus the exponents and that will be the new exponent, and just copy the base = 76

**(THERE IS ALREADY A REVIEWER FOR “TERMS RELATED TO FRACTIONS”)**