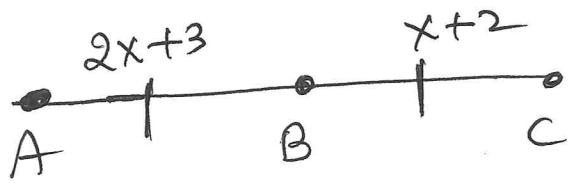
1.3 Geometry MR-REDDYS NOTES



1) FIND X
2) FIND AB

$\overline{AB} = \overline{BC}$

$2x+3 = x+2$

$-x \quad -x$

$x+3 = 2$

$-3 \quad -3$

$x = -1$

$AB = 1$

2) 

B is the Mid-point :

MID-POINT FORMULA: $\dfrac{x_1+x_2}{2}, \dfrac{y_1+y_2}{2}$

Ex. IF

$x_1 y_1$ $\quad$ $x_2 y_2$

FIND the Co-ordinates of Mid-pt B.

$$B = \left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$$

$$= \left(\frac{1+4}{2}, \frac{2+6}{2}\right) = \left(\frac{5}{2}, \frac{8}{2}\right) = \left(\frac{5}{2}, 4\right)$$

(3) IF $A = (2,4)$ $\quad$ $B = (4,6)$

$x_1 y_1$ $\quad$ $x_2 y_2$

FIND the distance $\overline{AB}$

$$\overline{AB} = \sqrt{(x_2-x_1)^2 + (y_2-y_1)^2}$$

$$= \sqrt{(4-2)^2 + (6-4)^2}$$

$$= \sqrt{2^2+2^2} = \sqrt{4+4} = \sqrt{8} = 2\sqrt{2}$$

$\sqrt{4}\sqrt{2}$

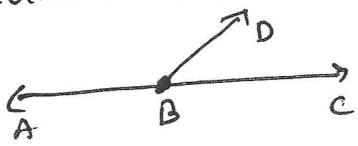
Distance FORMULA: $\sqrt{(x_2-x_1)^2 + (y_2-y_1)^2}$

1.5 MR. REDDY'S NOTES:

1) COMPLEMENTARY ANGLES:- $m\angle A + m\angle B = 90^\circ$ Ex: $30^\circ, 60^\circ$

2) SUPPLEMENTARY ANGLES:- $m\angle A + m\angle B = 180^\circ$ Ex: $125^\circ, 55^\circ$

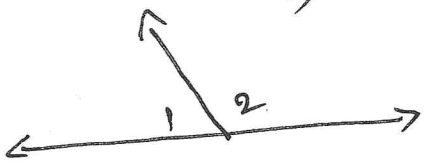
3) ADJACENT ANGLES: SHARE A COMMON VERTEX AND COMMON SIDE.



$\angle ABD$, $\angle DBC$ ARE Adjacent.

4) LINEAR PAIR:- 1) NON COMMON SIDES ARE OPPOSITE RAYS:

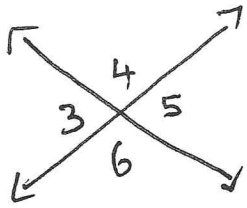
2) THE ANGLES IN A LINEAR PAIR ARE SUPPLEMENTARY



$\angle 1$ AND $\angle 2$ ARE LINEAR PAIR:

AND $\angle 1 + \angle 2 = 180^\circ$ (SUPPLEMENTARY)

5) VERTICAL ANGLES:- THEIR SIDES FORM TWO PAIRS OF OPPOSITE RAYS:



$\angle 3$ AND $\angle 5$ ARE VERTICAL ANGLES:

$\angle 4$ AND $\angle 6$ ARE VERTICAL ANGLES:

PROBLEM:- TWO ANGLES FORM A LINEAR PAIR. THE MEASURE OF ONE ANGLE IS 5 TIMES THE MEASURE OF THE OTHER. FIND THE MEASURE OF EACH ANGLE:

SOLUTION:- $x^\circ + 5x^\circ = 180^\circ$

$6x^\circ = 180^\circ$

$\boxed{x = 30}$

THE MEASURE OF THE ANGLES ARE 30°, AND 150°

1.6 MR. REDDY'S NOTES:

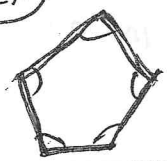
I CONVEX POLYGON:

1) EVERY INTERNAL ANGLE IS LESS THAN OR EQUAL TO 180°

2) EVERY LINE SEGMENT between two vertices remains inside or ON THE boundary of the polygon:-

3) ALL THE Diagonals will lie inside The POLYGON.

Ex

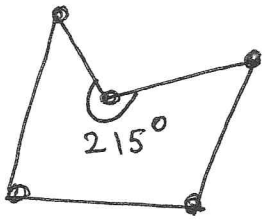


II CONCAVE POLYGON:-

1) A POLYGON THAT HAS ONE OR MORE INTERIOR ANGLES GREATER THAN 180°.

2) SOME VERTICES POINT INWARDS TOWARDS THE CENTER.

Ex



3) SOME OF THE diagonals of Concave polygon will lie outside.

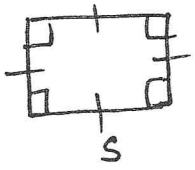
III

NUMBER OF SIDES	TYPE OF POLYGON:
3	TRIANGLE
4	Quadrilateral
5	Pentagon
6	Hexagon
7	Heptagon
8	octagon
9	Nonagon
10	Decagon
12	Dodecagon

1.7 PERIMETER, CIRCUMFERENCE, AREA:-

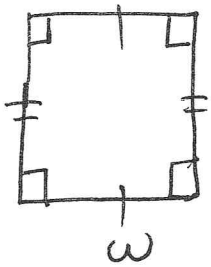
MR. REDDY'S NOTES:-

1) SQUARE:



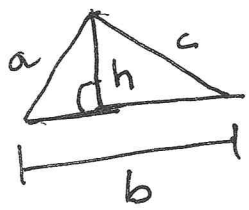
- Side Length = s
- perimeter = $P = 4s$
- Area $A = s^2$

2) Rectangle:



Length = L
width = w
$P = 2L + 2w$
$A = Lw$

3) TRIANGLE:

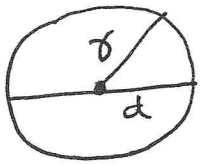


Side Lengths a, b, c:
base b, height = h.

$P = a + b + c$

$A = \frac{1}{2}bh$

4) CIRCLE:



diameter d,
radius r

$C = \pi d = 2\pi r \quad (d = 2r)$

$A = \pi r^2$ $\quad \pi = 3.14$ (APP)

5) Distance FORMULA $\overline{AB}$

A (x_1, y_1) B (x_2, y_2)

$$\overline{AB} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

(6) (AREA)

$10{,}000\ cm^2 = 1\ m^2$

$1{,}000{,}000\ m^2 = 1\ km^2$

$144\ in^2 = 1\ ft^2$

$1\ yd^2 = 9\ ft^2$

$1\ cm^2 = 100\ mm^2$

(7) Length:

10 mm = 1 cm
100 cm = 1 m
1000 m = 1 km
12 in = 1 ft
3 ft = 1 yd
5280 ft = 1 mile
1760 yd = 1 mile