Geometry

What we will learn?

- triangles

- polygons

- Angle sum property of triangle
    $\longrightarrow$ proof
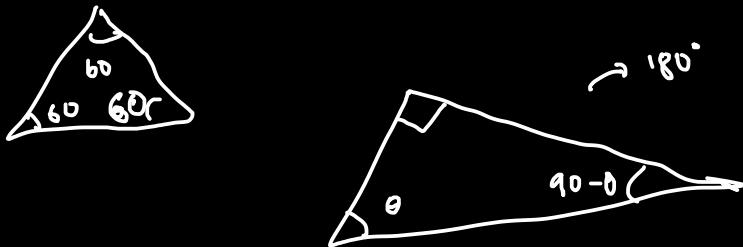
- Areas of rectangle, squares, triangles.

Angles :-

angle
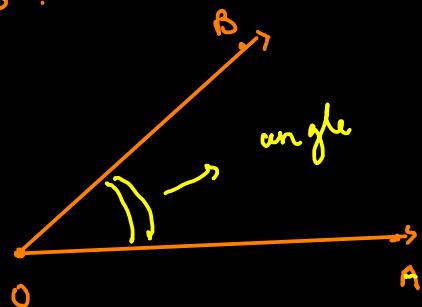
☒ $\overrightarrow{OA}$ is a ray

$\overrightarrow{OB}$ is a ray

☒ Ray $\overrightarrow{OA}$ and Ray $\overrightarrow{OB}$ are meeting at point O.

So O is called "vertex".

Types of Angles :-

- acute
- right
- obtuse
- straight
- reflex
- complete

$90° = \frac{360}{4}$

90° right angle

360°

Types of Angles

∠90°

Acute Angle

=90°

Right Angle

∠180° 90°

Obtuse Angle

180°

Straight Angle

180°

Reflex Angle

Full Rotation Angle
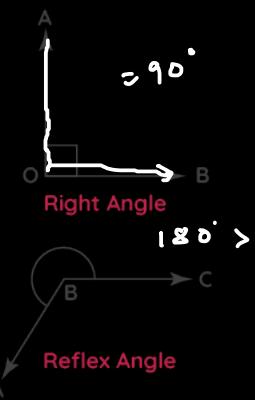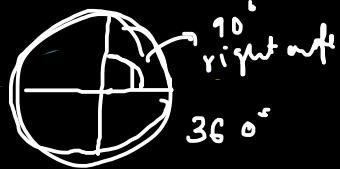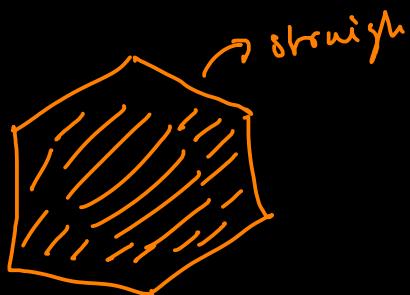
Polygons

→ straight

A polygon with 3 sides is called Triangle.

↳ straight line is not a polygon because it is not connected, no area and it is not closed

Types of triangle :-

By Angle
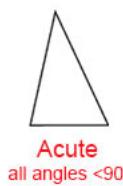
Acute
all angles <90
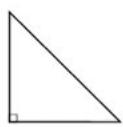
Right
one angle = 90
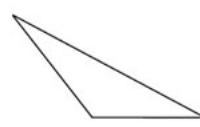
Obtuse
one angle > 90

By Side
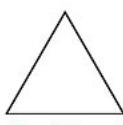
Equilateral
3 equal sides
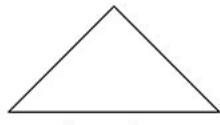
Isosceles
2 equal sides
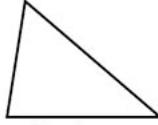
Scalene
no equal sides

↳ A polygon with 4 sides is called quadrilateral

Ex:- square, rectangle

Types of Quadrilaterals
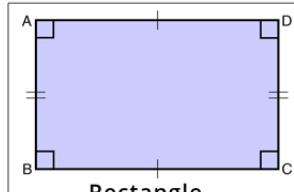
Rectangle
• Opposite sides are equal
• All interior angles are 90°
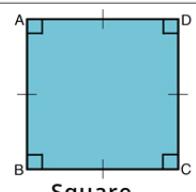
Square
• All four sides are equal
• All interior angles are 90°
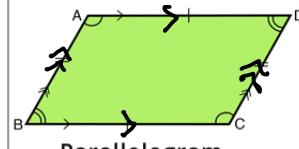
Parallelogram
• Opposite sides are equal and parallel
• Opposite interior angles are equal
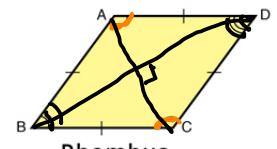
Rhombus
• All four sides are equal
• Opposite interior angles are equal
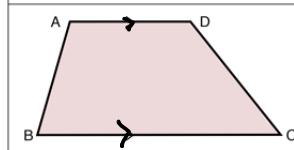
Trapezoid
• One pair of opposite sides is parallel
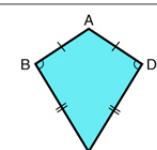
Kite
• Two pairs of adjacent sides are equal
• One pair of opposite interior angles are equal

distance always equal
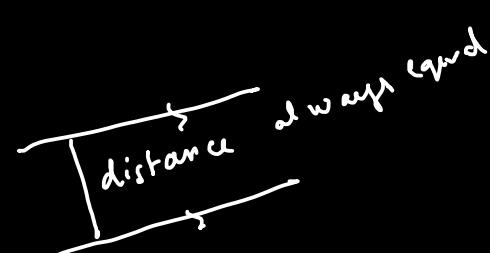
A polygon with 5 sides is called pentagon

A polygon with 6 sides is called hexagon

7 sides → heptagon / septagon

8 sides → octagon

9 sides → nonagon

10 sides → decagon

Angle Sum property
    in Triangles :-

Sum of the angles of a triangle is 180^r

X
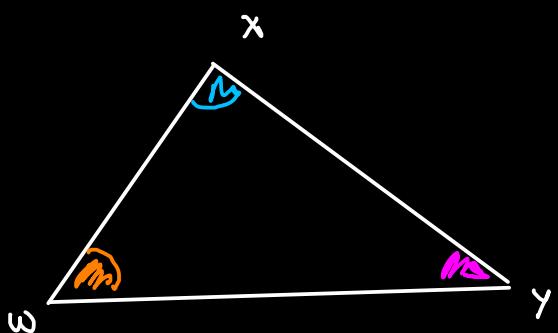
triangle → △
            ↓
used chemistry

△ → heat / delta

W   Y

Rehan's △
        ↓
triangle symbol
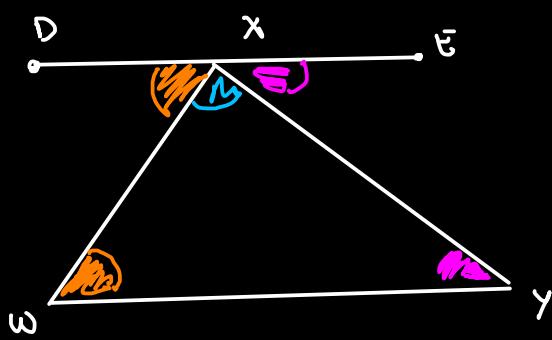
$\angle XWY + \angle WYX + \angle YXW$
$= 180^\circ$

We have $\overline{DE} \parallel WY$
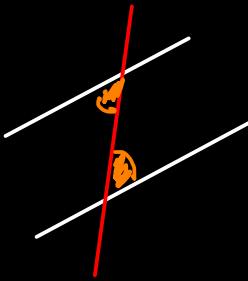
We wanted show that

$\angle XWY + \angle WYX + \angle YXW = 180°$

But $\angle XWY = \angle DXW$

& $\angle WYX = \angle \overline{E}XY$

And $\angle DXW + \angle WYX + \angle EXY = 180°$
(straight line)
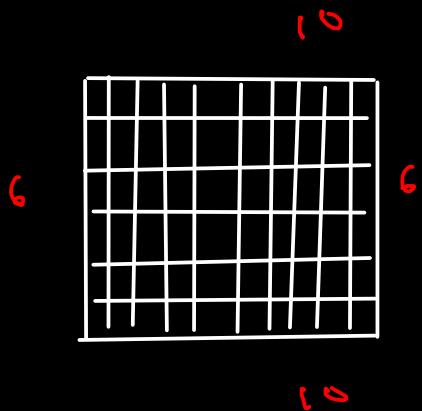
perimeter = 32 .

Area = 60

Area = How many 1×1 squares are there in this figure

= 60
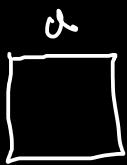
Area = $a \times a$

= 4 squares = 2×2

Area of   a triangle :-

Formula :- $\dfrac{h \times b}{2}$ →height   →base
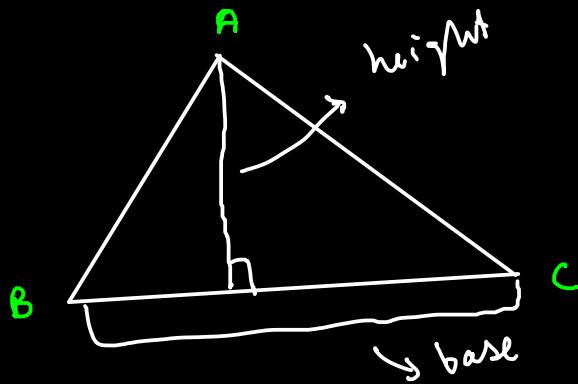
Area of   triangle   ABC

$= \dfrac{\text{height} \times \text{base}}{2}$

Q.
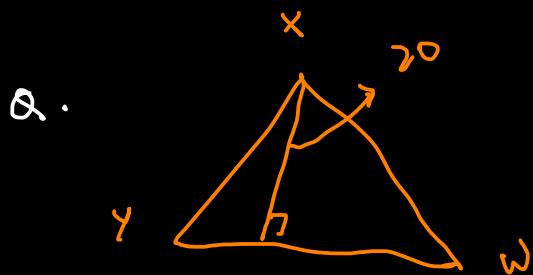
and YW = 40

Area of XYZ =

$\dfrac{20 \times 40}{2} = \dfrac{800}{2}$

$= 400$

Q
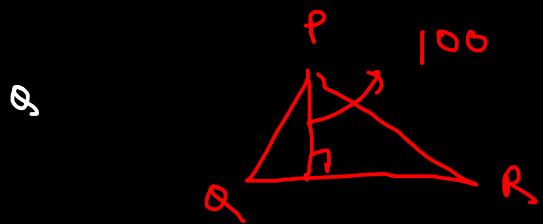
and QR = 10

Area of PQR =

$\dfrac{10 \times 100}{2} = \dfrac{1000}{2}$

$= 500$