

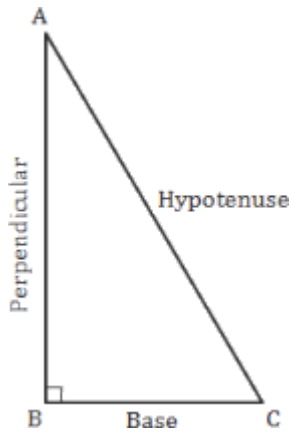


Area and Perimeter of Shapes Tricks and Formulas

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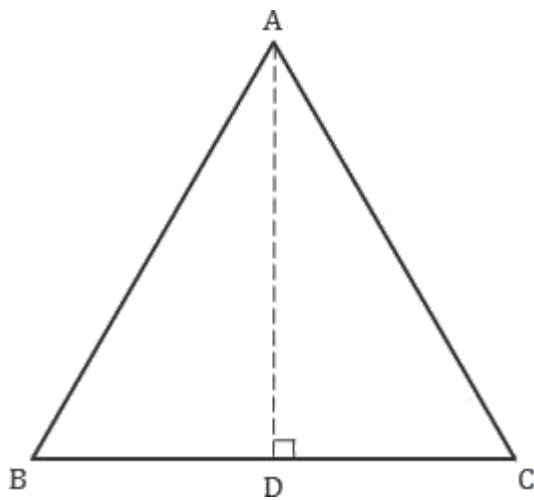
Pythagoras Theorem

For right triangle ABC



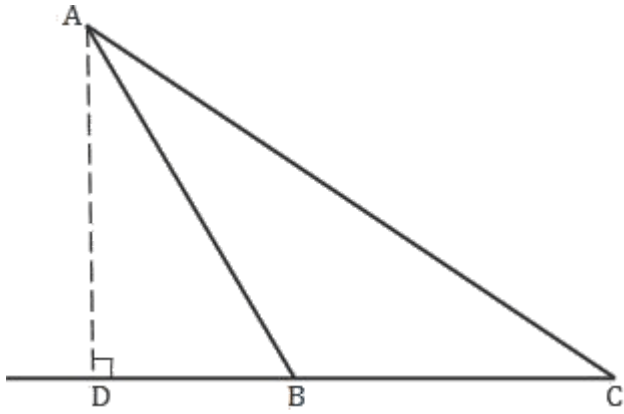
$$AC^2 = AB^2 + BC^2$$

For acute triangle ABC



$$AC^2 = AB^2 + BC^2 - 2 \times BC \times BD$$

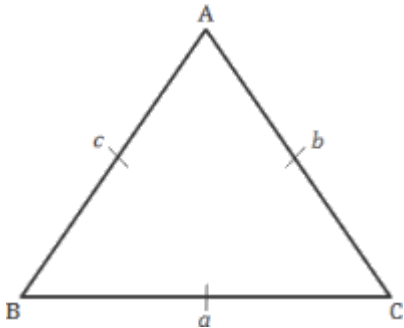
For obtuse triangle ABC



$$AC^2 = AB^2 + BC^2 + 2 \times BC \times BD$$

Area of Triangle

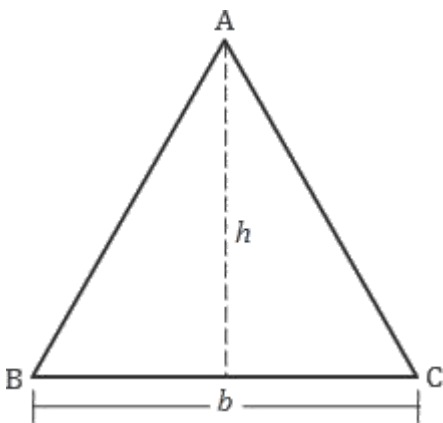
When Lengths of the Sides Are Given



$$\text{Area} = \sqrt{s(s-a)(s-b)(s-c)}$$

$$\text{Where, semiperimeter } (S) = \frac{a+b+c}{2}$$

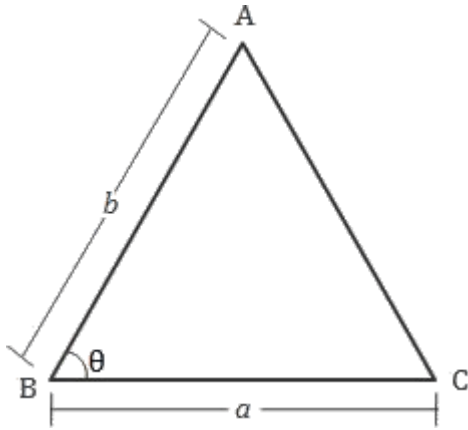
When Lengths of the Base and Altitude Are Given



$$\text{Area} = \frac{1}{2}bh$$

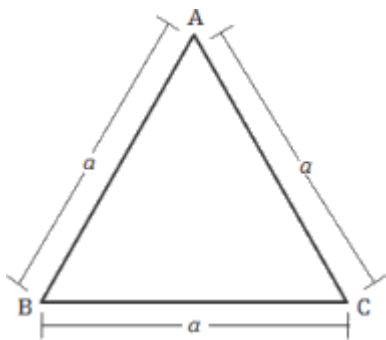
When Lengths of Two Sides and the Included Angle Are Given

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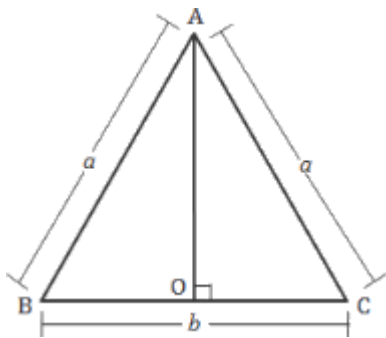
$$\text{Area} = \frac{1}{2}ab \sin\theta$$

For Equilateral Triangle



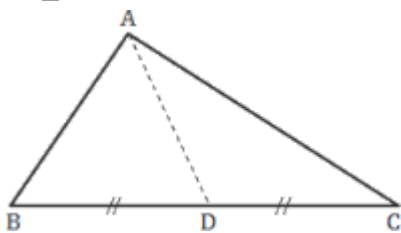
$$\text{Area} = \frac{\sqrt{3}}{4}a^2$$

For Isosceles Triangle



$$\text{Area} = \frac{b}{4} \times \sqrt{4a^2 - b^2}$$

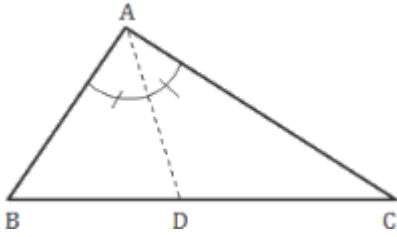
Apollos Theorem



If AD is the median, then:

$$AB^2 + AC^2 = 2(AD^2 + BD^2)$$

Angle Bisector Theorem



If AD is the angle bisector for angle A, then:

$$\frac{AB}{BD} = \frac{AC}{CD}$$

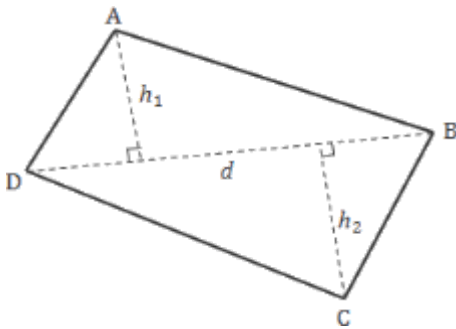
Area of Quadrilateral

For Cyclic Quadrilateral

$$\text{Area} = \sqrt{(s-a)(s-b)(s-c)(s-d)}$$

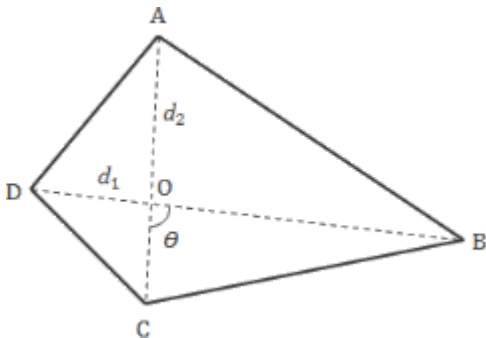
$$\text{where, semiperimeter } (s) = \frac{a+b+c+d}{2}$$

If Lengths of One Diagonal and Two Offsets Are Given



$$\text{Area} = \frac{1}{2}d(h_1 + h_2)$$

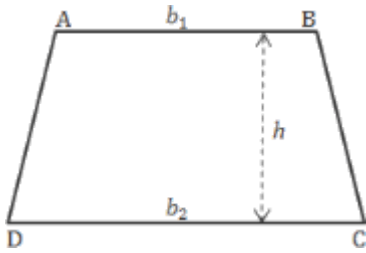
If Lengths of Two Diagonals and the Included Angle Are Given



$$\text{Area} = \frac{1}{2}d_1 d_2 \sin\theta$$

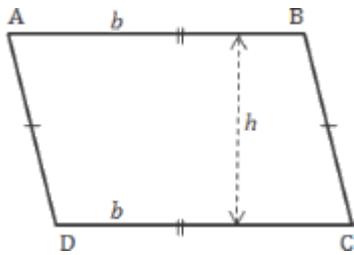
For Trapezium

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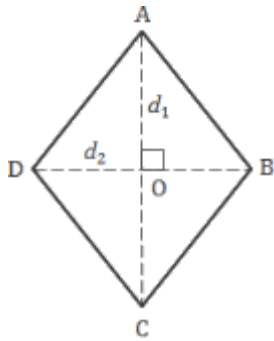
$$\text{Area} = \frac{1}{2}(b_1 + b_2) h$$

For Parallelogram



$$\text{Area} = bh$$

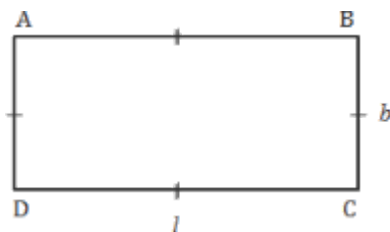
For Rhombus



$$\text{Area} = \frac{1}{2}d_1 d_2$$

The halves of diagonals and a side of a rhombus form a right angled triangle with side as the hypotenuse.

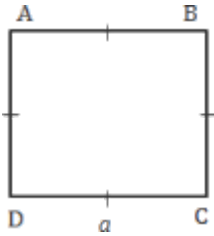
For Rectangle



$$\text{Area} = lb$$

$$\text{Perimeter of a rectangle} = 2(\text{length} + \text{breadth})$$

For Square



$$\text{Area} = A^2$$

$$\text{Area of a square} = \frac{1}{2} (\text{diagonal})^2$$

$$\text{Area of 4 walls of a room} = 2 (\text{length} + \text{breadth}) \times \text{height}$$

Polygons

Number of Diagonals

$$N_d = \frac{n(n-3)}{2}$$

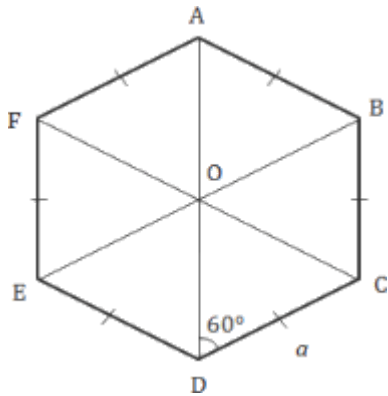
The Sum of All the Interior Angles

$$\sum A_i = (n-2)180^0$$

The Sum of All the Exterior Angles

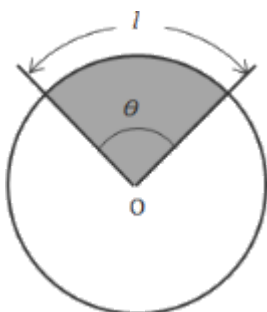
$$\sum A_e = 360^0$$

Area of Regular Hexagon



$$\text{Area} = \frac{\sqrt{3}}{2} a^2$$

Circle



Circumference

$$c = 2\pi r$$

Area

$$A = \pi r^2$$

Length of Arc

$$l = 2\pi r \left(\frac{\theta}{360^\circ} \right)$$

Area of Sector

$$A_s = \pi r^2 \left(\frac{\theta}{360^\circ} \right)$$

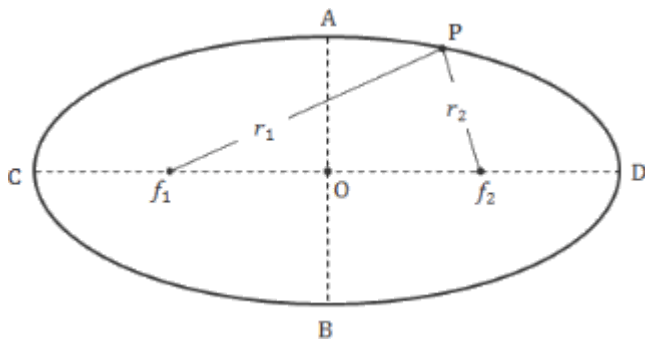
Or

$$A_s = \frac{1}{2}lr$$

Perimeter of Sector

$$P_s = l + 2r$$

Ellipse



If semi-major axis (OD) = a and semi-minor axis (OA) = b,

Perimeter of the Ellipse

$$P_e = \pi(a + b)$$

Area of the Ellipse

$$A_e = \pi ab$$

Frequently Asked Questions (FAQs)

How can prepare csir net (maths)

(- sy...@ on 29-Jun-2016)

[1 Answer](#)

You need to start preparing by referring to the Syllabus and solving all the past year papers thoroughly, this will provide you guidance for Mathematical Sciences.

- Examrace on 04-Jul-2016

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