



# VIDYA BHAWAN, BALIKA VIDYAPITH

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(Affiliated to CBSE up to +2 Level)

CLASS: X

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SUB.: MATHEMATIC

- Topic  $\rightarrow$  Linear Eq<sup>n</sup> in two Variable  $\Rightarrow$
- 1) In a Competitive examinations, One mark is awarded for each Correct answer while  $\frac{1}{2}$  marks is deducted for every wrong answer. Jayanti answered 120 questions and got 90 marks. How many questions did she answer correctly?

Ans  $\rightarrow$  Let No of Correct answered is  $x$   
" " Wrong answered is  $y$

A/q

$$1 \cdot x - \frac{1}{2} y = 90$$

$$\frac{x}{1} - \frac{1}{2} y = 90$$

$$\frac{2x - y}{2} = 90$$

$$2x - y = 180 \text{ --- (1)}$$

again  $x + y = 120 \text{ --- (II)}$

Adding eq<sup>n</sup> (1) and (II),

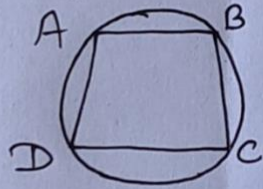
$$2x - y = 180$$

$$x + y = 120$$

$$\hline 3x = 300 \Rightarrow x = 100, \therefore y = 20$$

∴ She answered 100 question  
Correctly.

2) In quad ABCD (Cyclic quad)  
 $\angle A = (6x + 10)^\circ$ ,  $\angle B = (5x)^\circ$   
 $\angle C = (x + y)^\circ$ ,  $\angle D = (3y - 10)^\circ$   
Find  $x$  and  $y$  and hence the  
values of four angles.



$$\angle A + \angle C = 180 \quad \left\{ \begin{array}{l} \because \text{opp angles of} \\ \text{a cyclic quad} \\ \text{is } 180^\circ \end{array} \right.$$

$$\therefore 6x + 10 + x + y = 180$$

$$7x + y = 180 - 10$$

$$7x + y = 170 \quad \text{--- (1)}$$

$$\angle B + \angle D = 180 \quad \left\{ \begin{array}{l} \text{''} \\ \text{''} \end{array} \right.$$

$$5x + 3y - 10 = 180$$

$$5x + 3y = 180 + 10$$

$$5x + 3y = 190 \quad \text{--- (11)}$$

Multiplying eq (1) by 3

$$21x + 3y = 510$$

$$\begin{array}{r} 21x + 3y = 510 \\ - \quad 5x + 3y = 190 \\ \hline \end{array}$$

$$16x = 320$$

$$x = 20 ; \therefore y = 30.$$

Solving