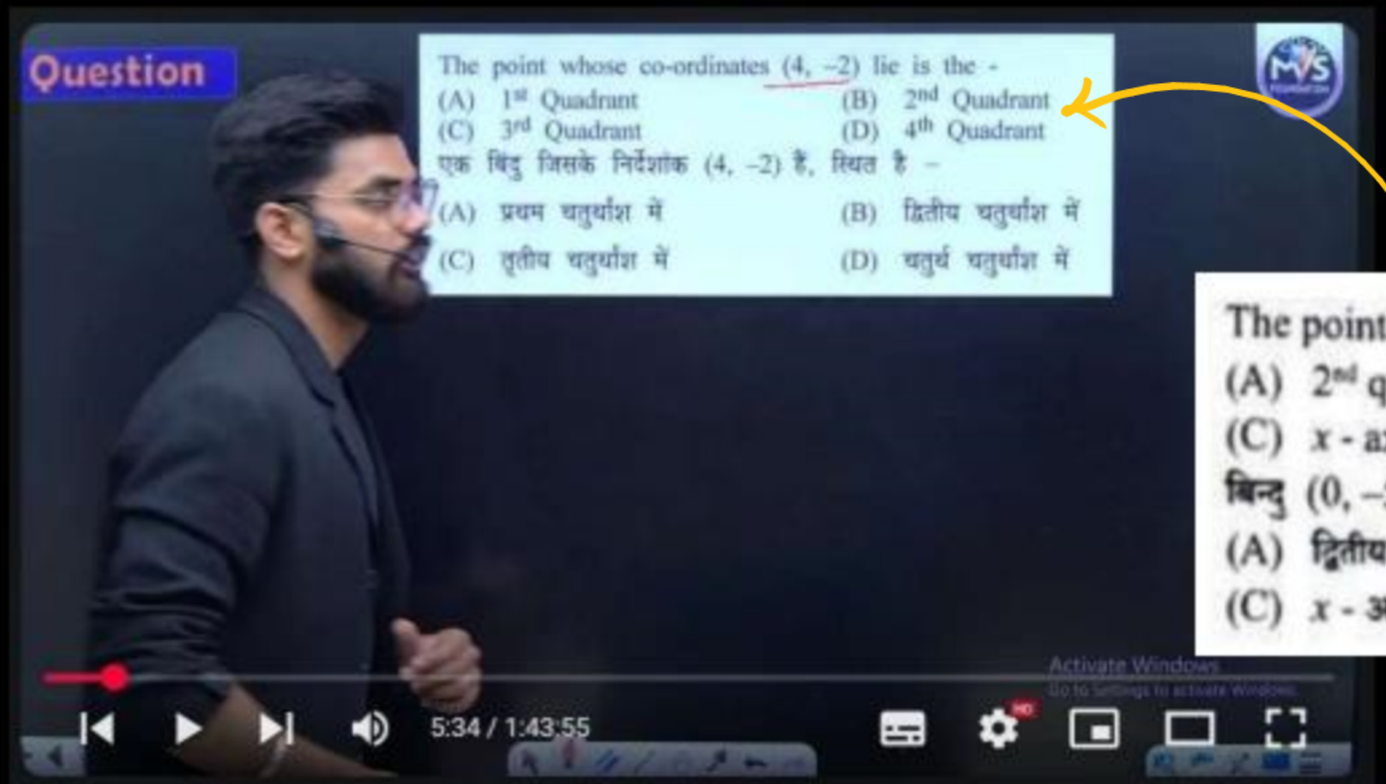
SUPER CLASS 10TH 30

MOCK TEST

30th Oct

80.1

DAY 1TH



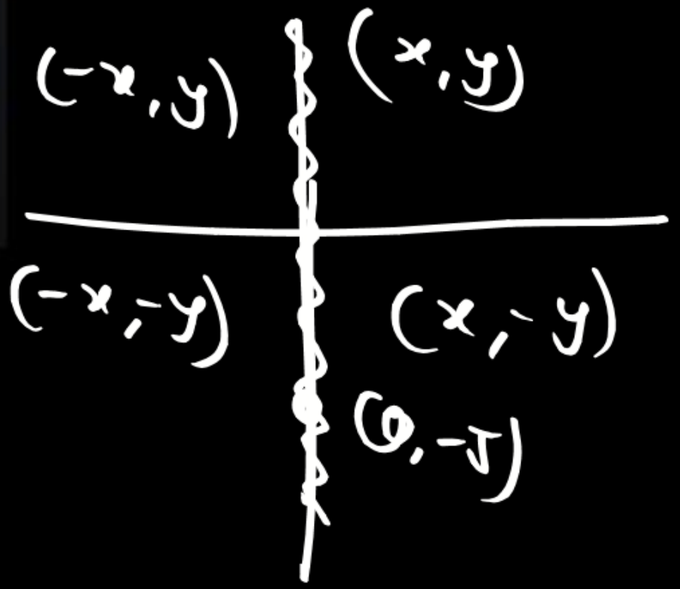
NIOS Class 10th Math's Most Important Questions with Solutions | Pass 100% | NO Fail

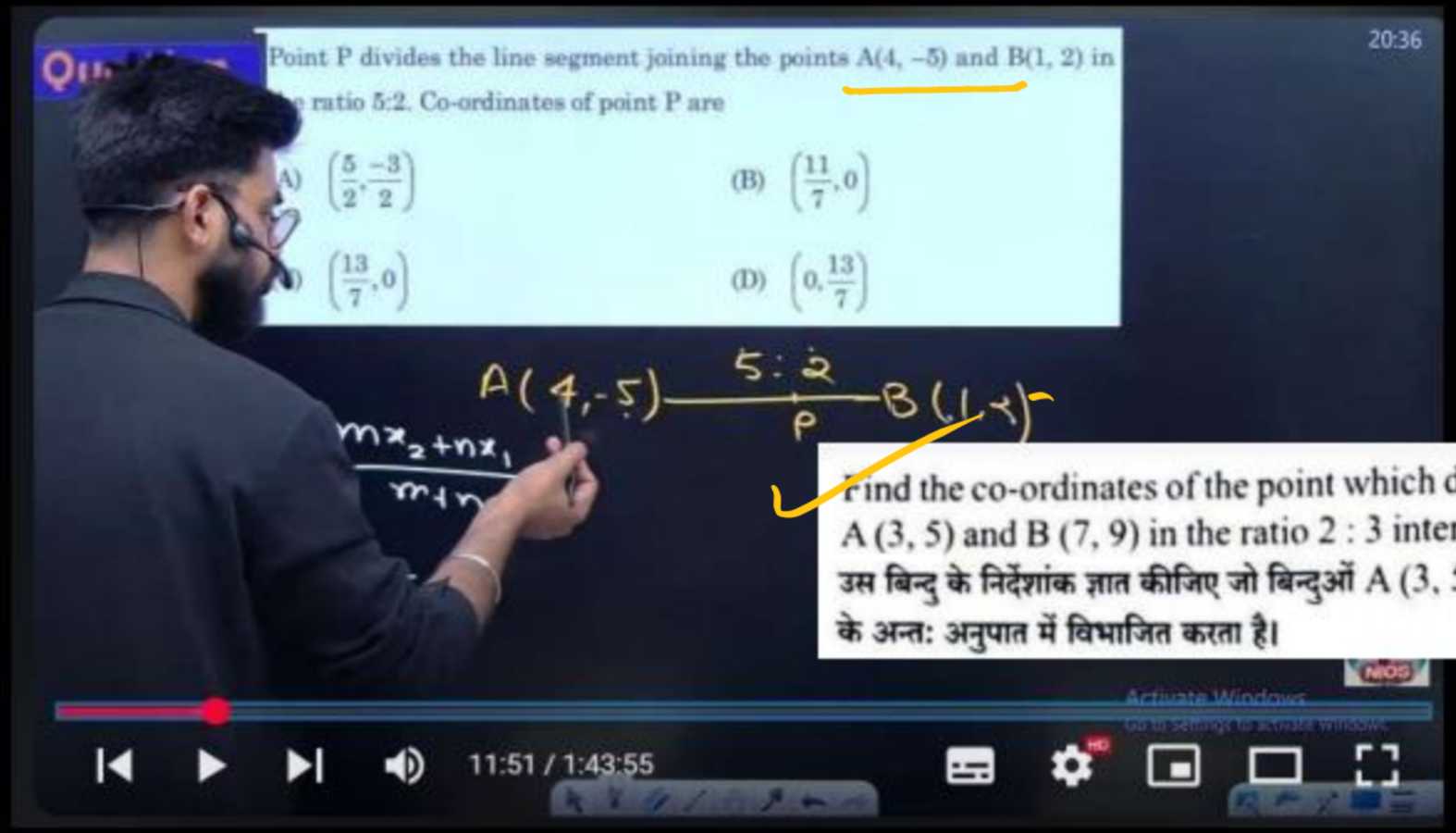
The point (0, –5) lies on/in -

(A) 2nd quadrant
(B) 3rd quadrant
(C) x - axis
(D) y - axis

बिन्दु (0, –5) स्थित है :

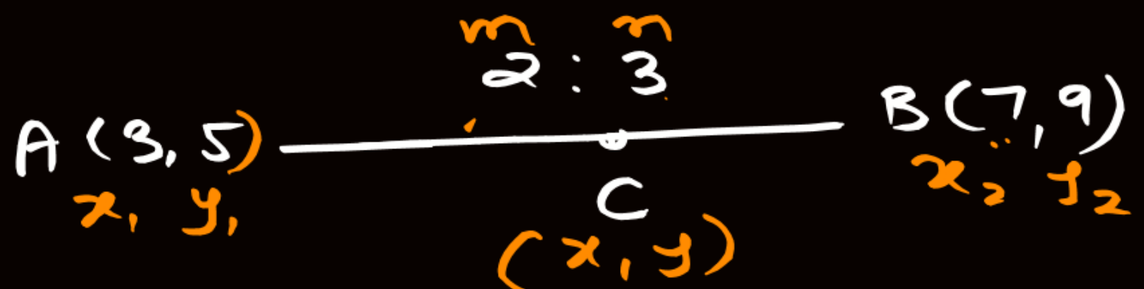
(A) द्वितीय चतुर्थांश में
(B) तृतीय चतुर्थांश में
(C) x - अक्ष पर
(D) y - अक्ष पर





Find the co-ordinates of the point which divides the line segment joining the points A (3, 5) and B (7, 9) in the ratio 2 : 3 internally. [2]

उस बिन्दु के निर्देशांक ज्ञात कीजिए जो बिन्दुओं A (3, 5) तथा B (7, 9) को मिलाने वाले रेखाखंड को 2 : 3 के अन्त: अनुपात में विभाजित करता है।



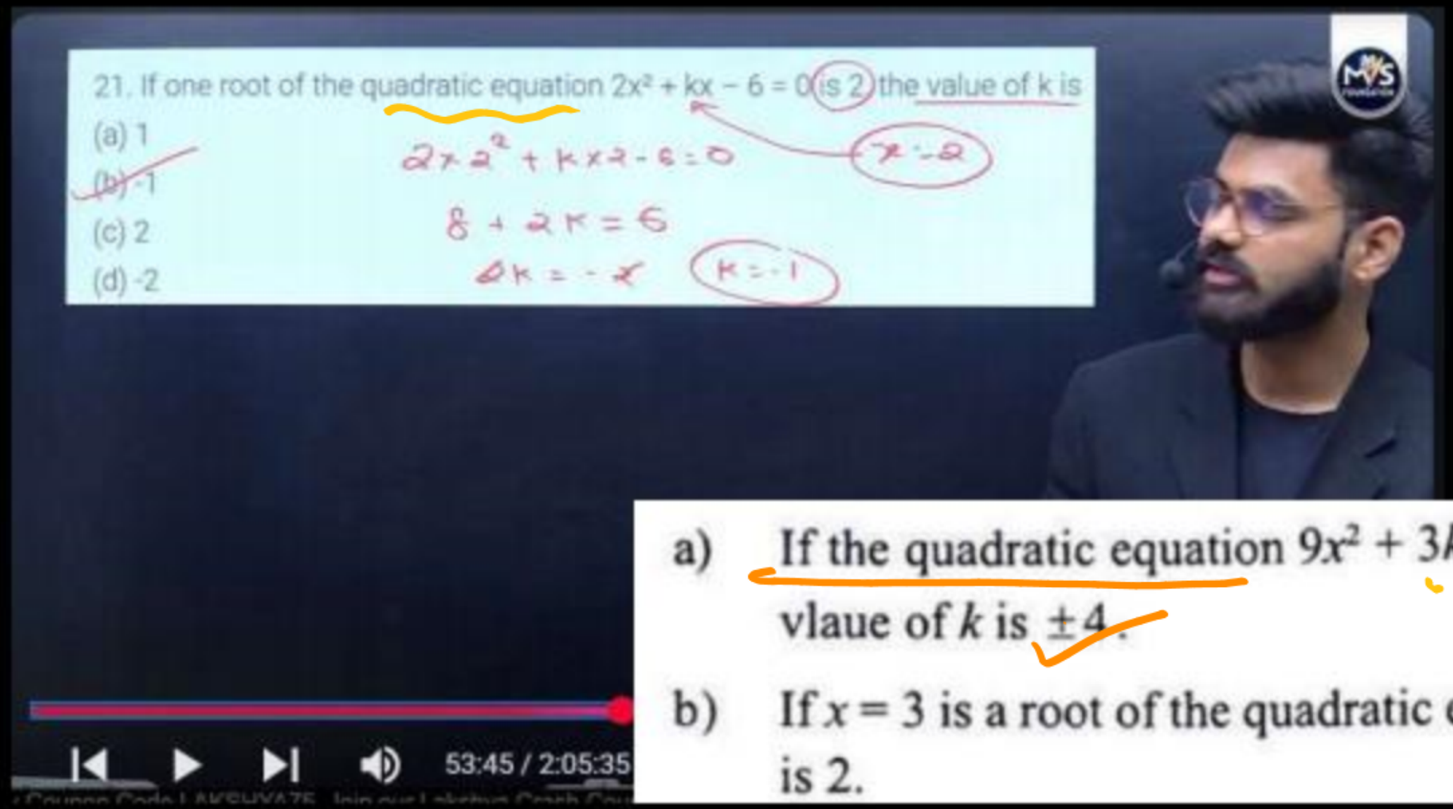
$$x = \frac{mx_2 + nx_1}{m+n}$$

$$y = \frac{my_2 + ny_1}{m+n}$$

$$x = \frac{14+9}{5}$$

$y = ??$

$$x = \frac{23}{5}$$



$$D = b^2 - 4ac = 0$$

a) If the quadratic equation $9x^2 + 3kx + 4 = 0$ has real and equal roots, then the vlaue of k is ± 4.

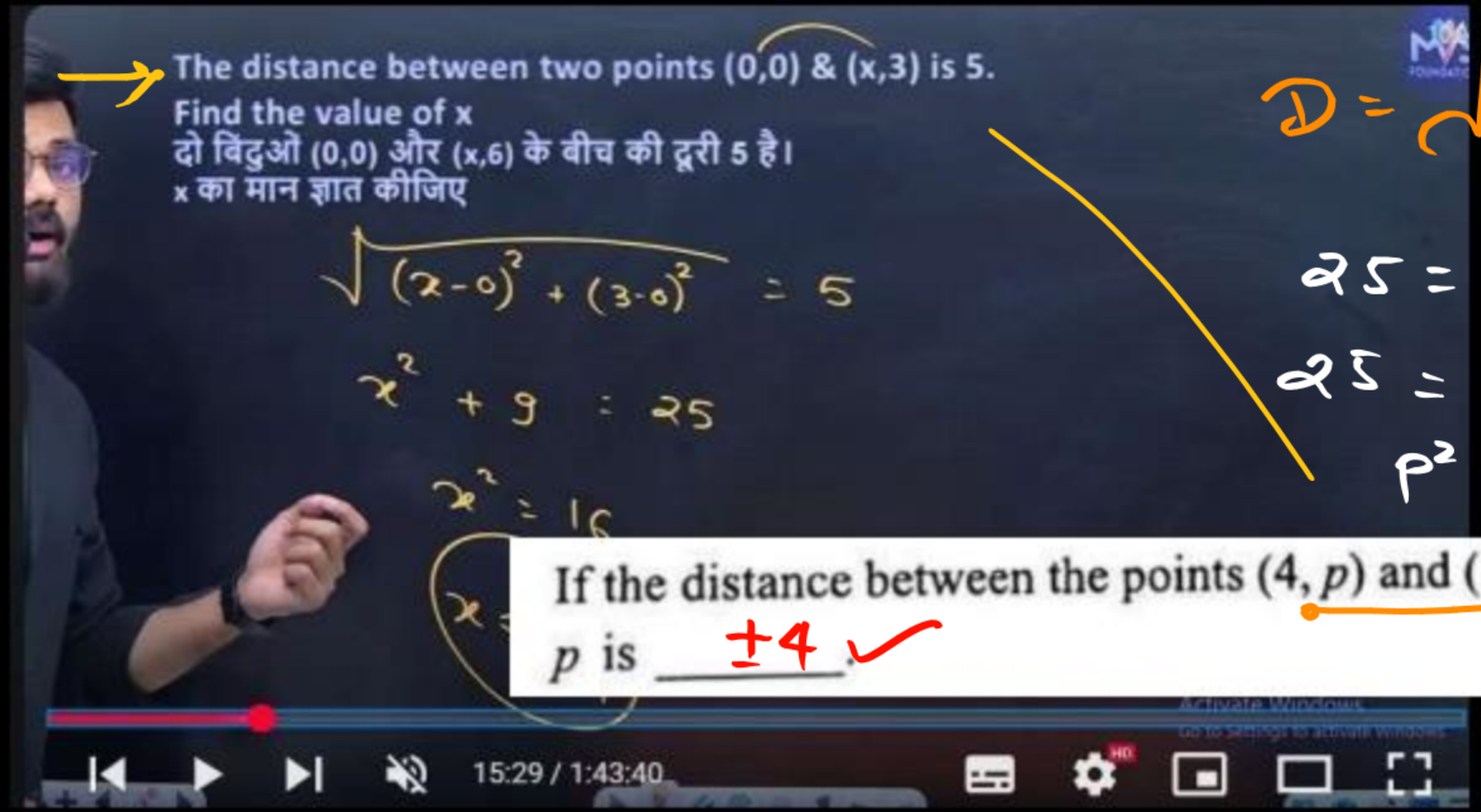
b) If $x = 3$ is a root of the quadratic equation $x^2 - 2kx - 6 = 0$, then the value of k is 2.

$9x^2 + 3kx + 4 = 0$

$9k^2 - 4\times9\times4 = 0$

$9k^2 = 4\times9\times4$

$k = \pm 4$



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

$$25 = (-3)^2 + (0-p)^2$$

$$25 = 9 + p^2$$

$$p^2 = 16 \rightarrow p < \begin{matrix} 4 \\ -4 \end{matrix}$$

If the distance between the points $(4, p)$ and $(1, 0)$ is 5 unit, then the value of p is ± 4 ✓

2024

If $\sin A = \cos A$, $0 \le A \le 90°$, then the angle A is equal to

(A) 30°

(B) 60°

(C) 0°

(D) 45°

$\tan 45° = \cot 45°$

A B

$A + B = 90°$

$A = 90° - B$

$\tan A = \tan(90° - B)$

42:29 / 1:15:45

If $\sin A = \frac{1}{2}$, then the value of cot A is

(A) $\sqrt{3}$ (B) $\frac{1}{\sqrt{3}}$ (C) $\frac{\sqrt{3}}{2}$ (D) 1

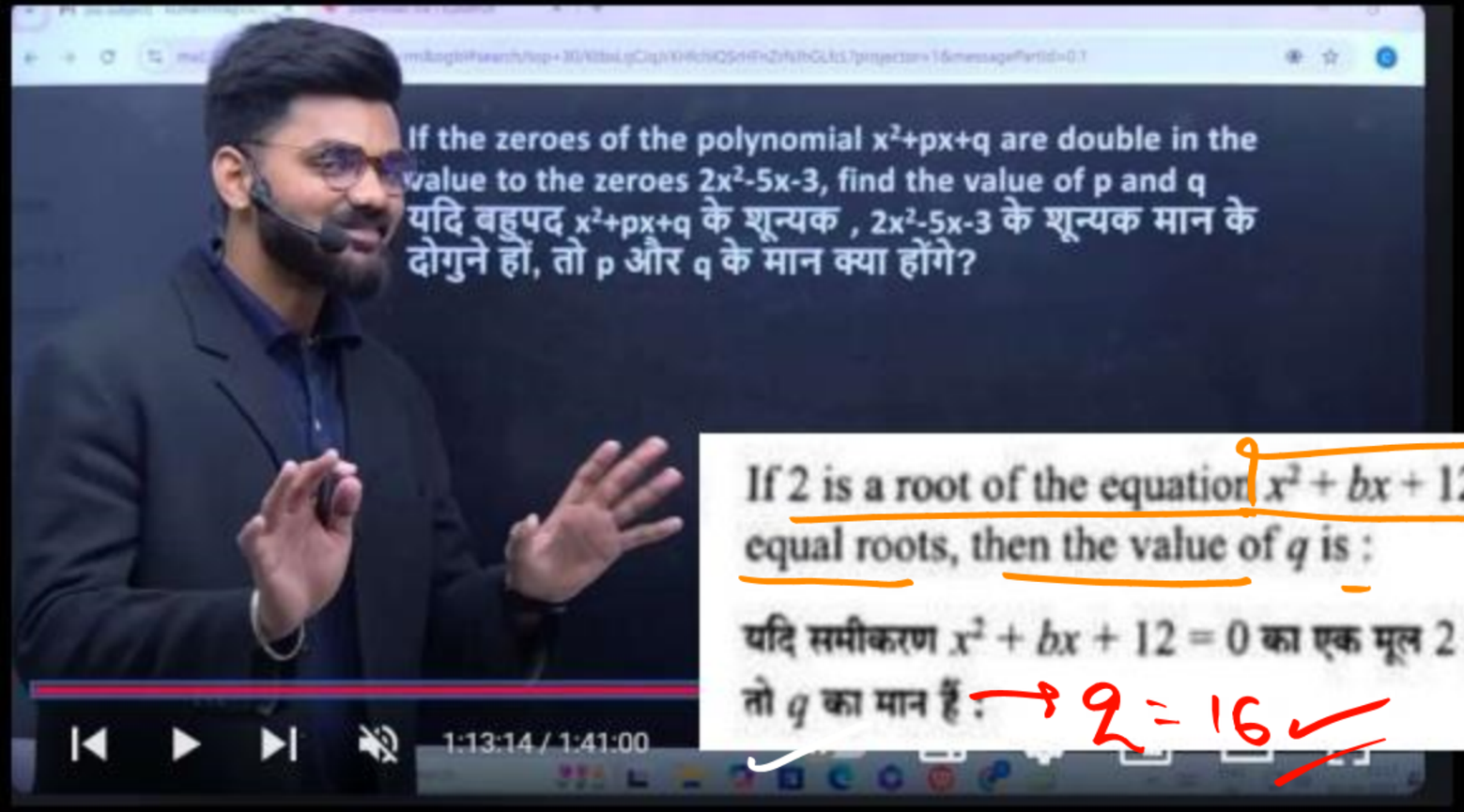
$\sin A = \frac{P}{H} = \frac{1}{2}$

$P^2 + B^2 = H^2$

$\tan A = \cot B$

a) If $\tan A = \cot B$, then the value of $A + B$ is 90°.

b) If $\tan A = \frac{3}{4}$ and $A + B = 90°$, then the value of cot B is 3/4.



If 2 is a root of the equation $x^2 + bx + 12 = 0$ and the equation $x^2 + bx + q = 0$ has equal roots, then the value of q is : [1]

यदि समीकरण $x^2 + bx + 12 = 0$ का एक मूल 2 है और समीकरण $x^2 + bx + q = 0$ के मूल समान हैं, तो q का मान है :

$\rightarrow q = 16$

$\rightarrow x^2 + bx + 12 = 0 \rightarrow x = 2$

$4 + 2b + 12 = 0$

$2b = -16$

$b = -8$

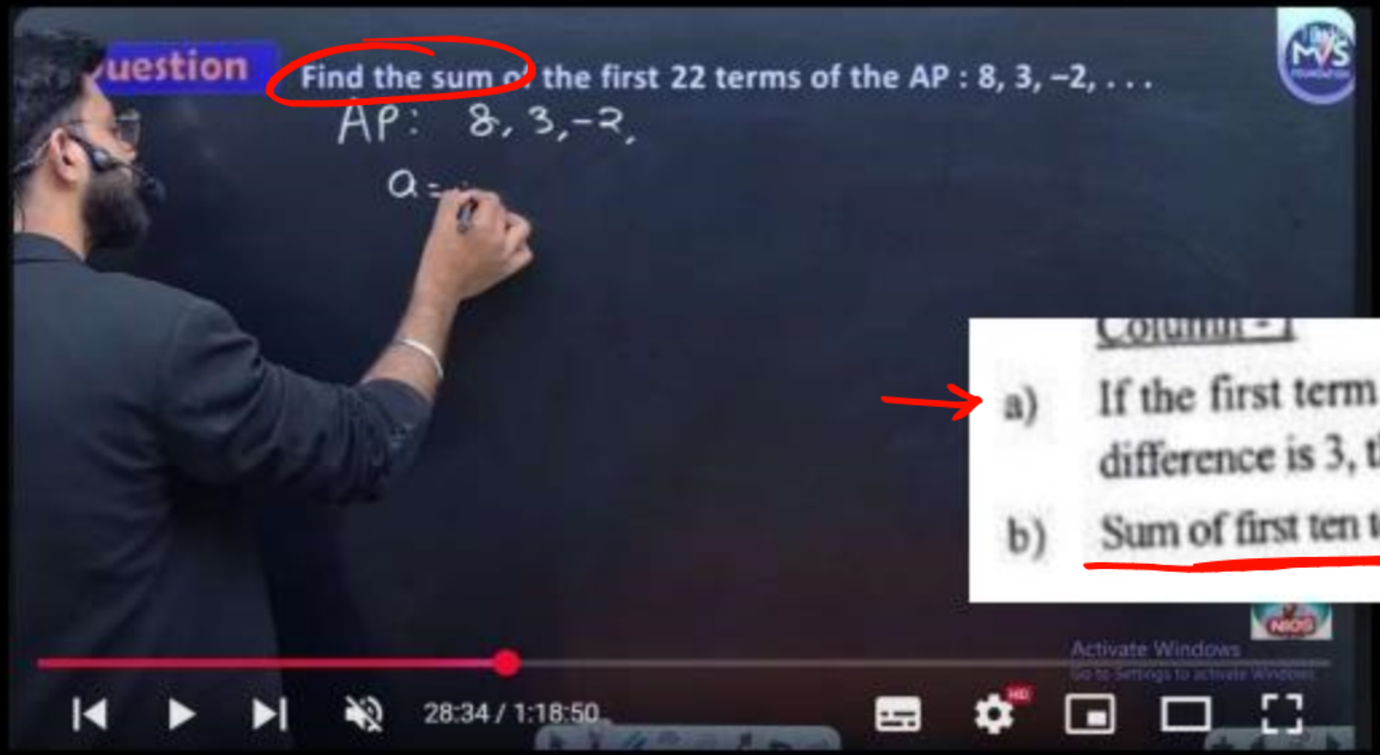
$12x^2 + bx + q = 0$

$b^2 - 4q = 0$

$\boxed{b^2 = 4q}$

$64 = 4q$

$\boxed{q = 16}$



a)	If the first term of an A.P. is 4 and common difference is 3, then 12th term of the A.P. is :	i)	47
b)	Sum of first ten terms of the A.P. 2, 5, 8, 11, ... is :	ii)	155
		iii)	37

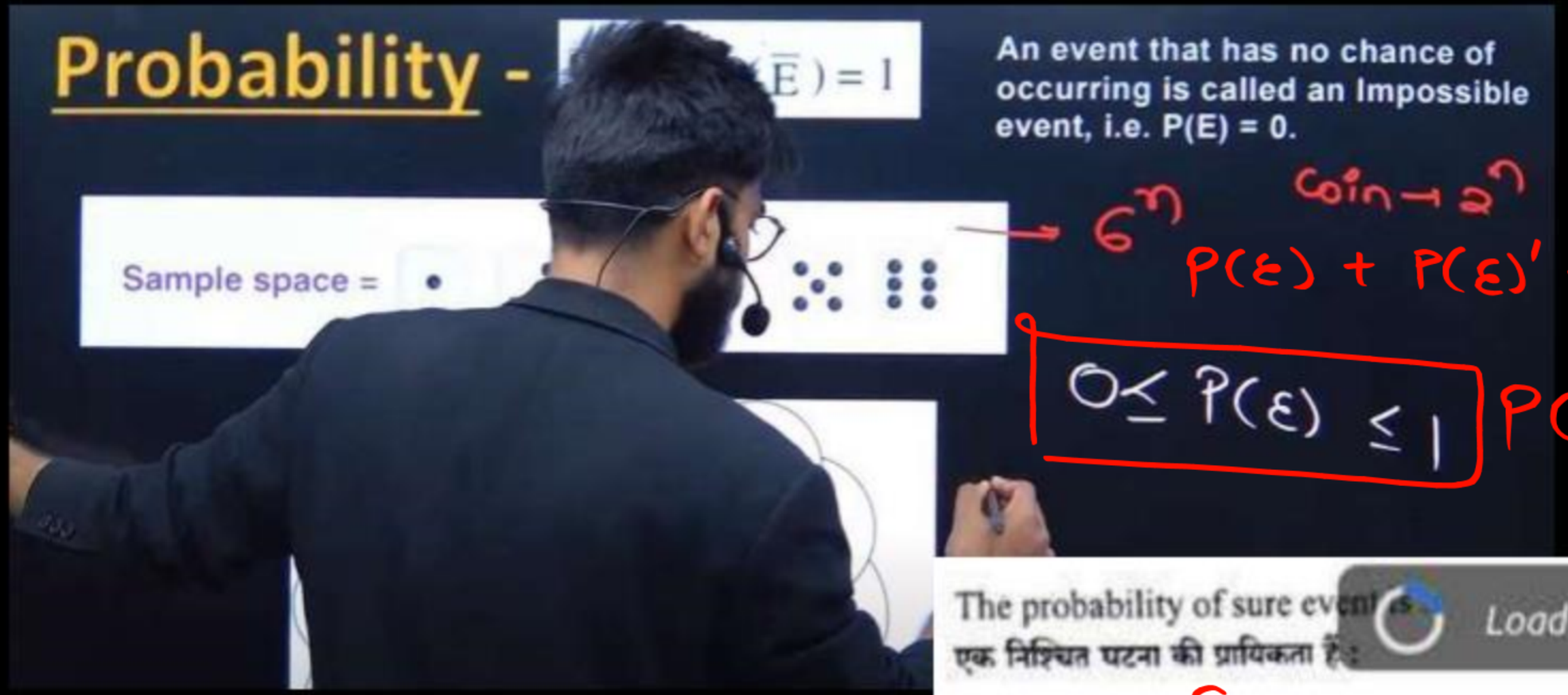
AP : 2, 5, 8, 11, ...

$a = 2,\ d = 3,\ n = 10$

$$S_n = \frac{n}{2}(2a + (n-1)d)$$

$$S_{10} = 5(4 + 9 \times 3)$$

$$= 155$$



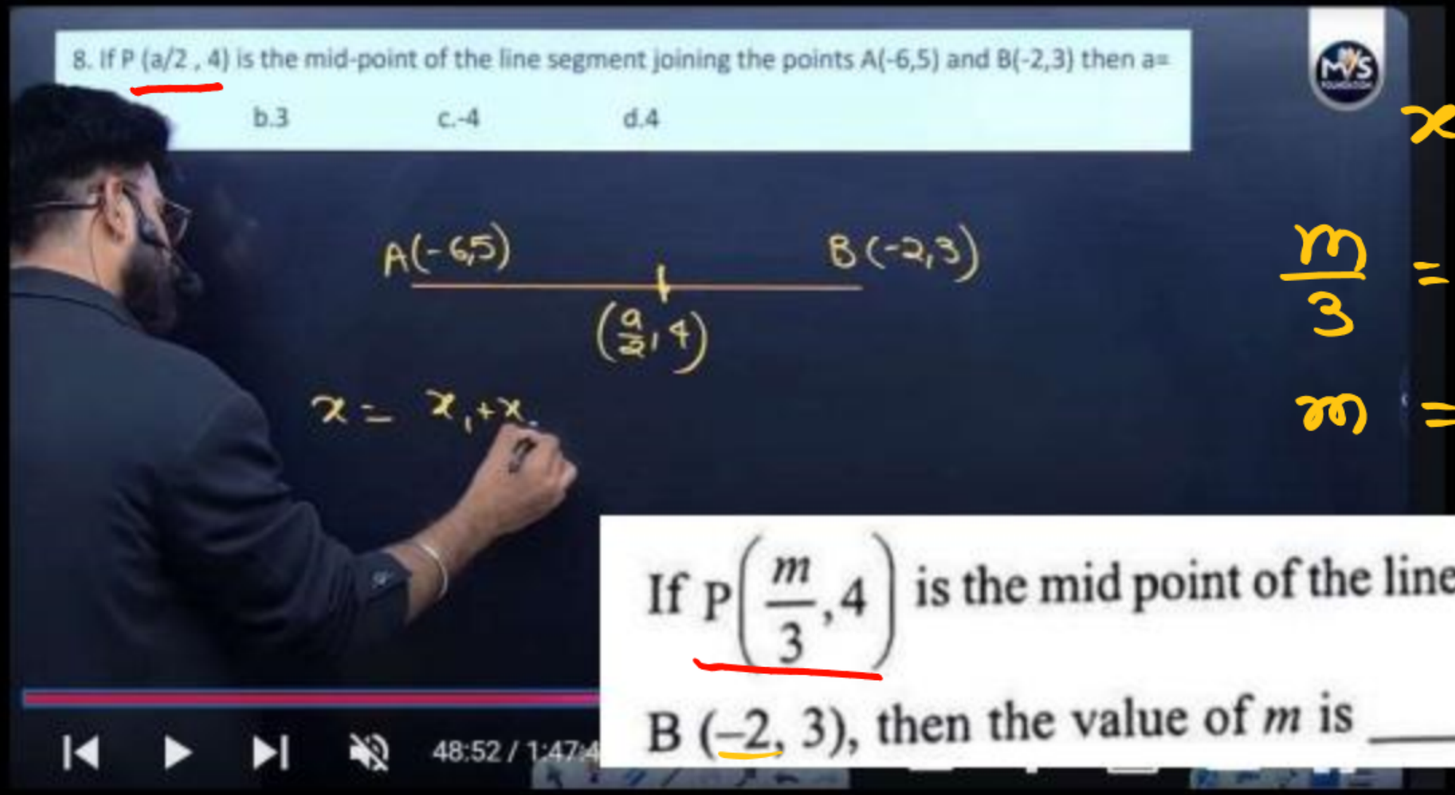
The probability of sure event is
एक निश्चित घटना की प्रायिकता है :

Loading...

Sure event

(A) 1 (B) $\frac{1}{2}$

(C) 0 (D) -1



$$x = \frac{x_1 + x_2}{2}, \quad y = \frac{y_1 + y_2}{2}$$

$$\frac{m}{3} = \frac{-6 + (-2)}{2}$$

$$m = -4 \times 3 \rightarrow (-12)$$

If $P\left(\frac{m}{3}, 4\right)$ is the mid point of the line segment joining the points A (–6, 5) and B (–2, 3), then the value of m is _____.

Apr - 2021

Rama borrowed Rs.14000 from her friend at 8% per annum simple interest. She returned the money after 2 years. How much did she pay back altogether?

रमा ने ₹ 14000 अपने मित्र से 8% वार्षिक ब्याज की दर पर उधार लिए। यदि उसने 2 वर्ष बाद यह राशि लौटा दी तो उसने कुल कितना धन वापिस किया?

$$SI = \frac{P \times R \times T}{100}$$

$$= \frac{2500 \times 3 \times 5}{100 \times 2}$$

$$= 375$$

→ Find the simple interest on ₹2,500 for 2 years and six months at 6% per annum. [2]

₹2,500 का 6% वार्षिक दर से 2 वर्ष और छः महीने का साधारण ब्याज ज्ञात कीजिए।

34:05 / 2:05:35

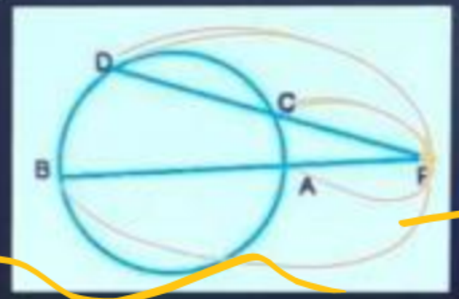
2 + 1/2

Fig. 17.20, if PC = 4 cm, PD = (x + 5) cm, PA = cm and PB = (x + 2) cm, find x.

$PC \times PD = PA \times PB$

$4(x+5) = 5 \times (x+2)$

$4x + 20 = 5x + 10$



CBSE

AB and CD are two chords of a circle intersecting each other at a point P inside the circle. If AP = $(x + 1)$ cm, BP = $(x + 2)$ cm, CP = x cm and DP = $(x + 4)$ cm, then the value of x is _____.

1:15:23 / 1:21:10

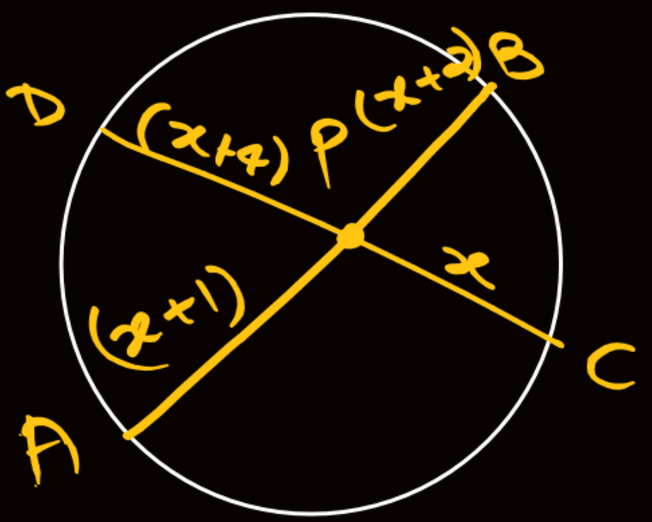
$AP \times PB = PC \times PD$

$(x+1)(x+2) = x(x+4)$

$x^2 + 2x + x + 2 = x^2 + 4x$

$3x + 2 - 4x = 0$

$\boxed{x = 2}$



If the number of illiterate persons in a country decreased from 150 lakh to 100 lakh in 10 years. The percentage rate of decrease is :

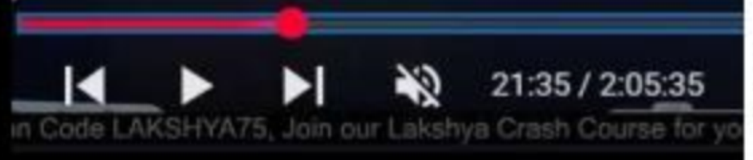
यदि 10 वर्षों में एक देश में अशिक्षित लोगों की संख्या 150 लाख से घटकर 100 लाख हो गई, तो अशिक्षित जनसंख्या घटने का प्रतिशत दर है :

(A) 30%

(B) 50%

(C) $33\frac{1}{3}\%$

(D) $23\frac{1}{3}\%$

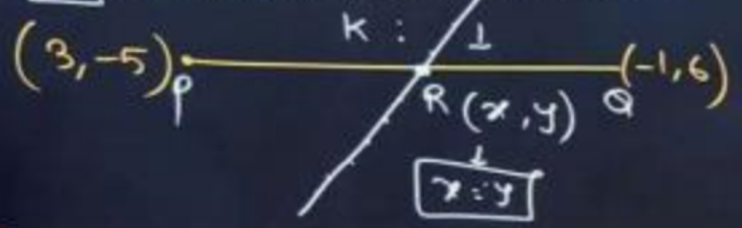


The value of a property increases every year at the rate of 5%. If its value at the end of 3 years be ₹4,07,484, what was its original value at the beginning of these years? [2]

एक संपत्ती के मूल्य में प्रतिवर्ष 5% की दर से वृद्धि होती है। यदि 3 वर्ष के अंत में उस संपत्ती का मूल्य ₹4,07,484 हो जाता है, तो इन वर्षों के शुरू में उस संपत्ती का वास्तविक मूल्य क्या था?

In what ratio is the line segment joining the points (3,–5) and (–1,6) divided by the line y=x ?

विंदु (3,-5) और (-1,6) को जोड़ने वाले रेखा खंड को रेखा y=x से किस अनुपात में विभाजित किया गया है



x =

If the point $(1, -2)$ lies on the line represented by the equation $2x - y = p$, then the value of p is _____.

1 (-2)

Activate Windows
Go to Settings to activate Windows.

43:03 / 1:43:40

२ + २ = P → (4)

Q2. A piece of wire 22 cm long is bent into the form of an arc of a circle subtending an angle of 60° at its centre. Find the radius of the circle.

11:47

$\frac{60}{360} \times 2\pi R$

$\frac{60}{360} \times 2 \times \frac{22}{7} \times R = 22\,cm$

1:13:12 / 1:23:20

length of an arc –

$\frac{\theta}{360} \times 2\pi R$ = l. of arc

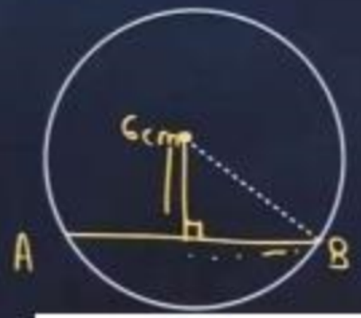
If the perimeter of the sector of a circle with radius 6 cm is 34 cm, then the angle of the sector is _____.

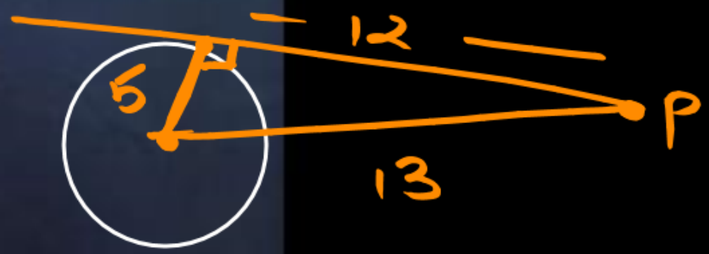
$\frac{\theta}{180} \times \frac{22}{7} \times 6 = 34 - 12$

$\theta = 210°$

If the length of a chord of a circle is 16 cm and the distance of the chord from the centre is 6 cm, find the radius of the circle.

if OM⊥ A





The length of a tangent drawn to a circle with radius 5 cm, from a point 13 cm from the centre of the circle is :

50:30 / 1:21:10

$$A = \frac{\sec^2 30^\circ - \tan^2 30^\circ}{\cos^2 30^\circ} + \frac{\operatorname{cosec}^2 60^\circ - \cot^2 60^\circ}{\sin^2 60^\circ}$$

If tan A = 3 cot A, then the measure of the angle A is :

(A) 15°

(B) 30°

(C) 45°

(D) 60°

$\tan A = 3 \times \frac{1}{\tan A}$

$\tan^2 A = 3$

$\tan A = \sqrt{3}$

Sum of two numbers is 105 and their difference is 45. Find the numbers.

दो संख्याओं का योगफल 105 है तथा उनका अंतर 45 है। संख्याएँ ज्ञात कीजिए।

$x + y = 105$ $\quad x > y$

$x - y = 45$

$2x = 150$

$x = 75, \; y = 30$

Given HCF (2520, 6600) = 40, LCM (2520, 6600) = 252 × k, then the value of k is :

(A) 1650
(B) 1600
(C) 165
(D) 1625

H.C.F. × L.C.M. = a × b

40 × 252 × k = 2520 × 6600

k = 1650

$(\sec\theta + \tan\theta)(1 - \sin\theta)$ is equal to :

(A) $\sec\theta$ (B) $\sin\theta$

(C) $\operatorname{cosec}\theta$ (D) $\cos\theta$

$$\left(\frac{1}{\cos\theta} + \frac{\sin\theta}{\cos\theta}\right)(1 - \sin\theta)$$

$$\frac{(1+\sin\theta)(1-\sin\theta)}{\cos\theta} = \frac{1-\sin^2\theta}{\cos\theta}$$

$$= \frac{\cos^2\theta}{\cos\theta}$$

If the area of a sector is one-twelfth that of a complete circle, then the angle of the sector is :

(A) $36°$

(B) $30°$

(C) $60°$

(D) $45°$

$\theta = 360° \times \frac{1}{12} = 30°$

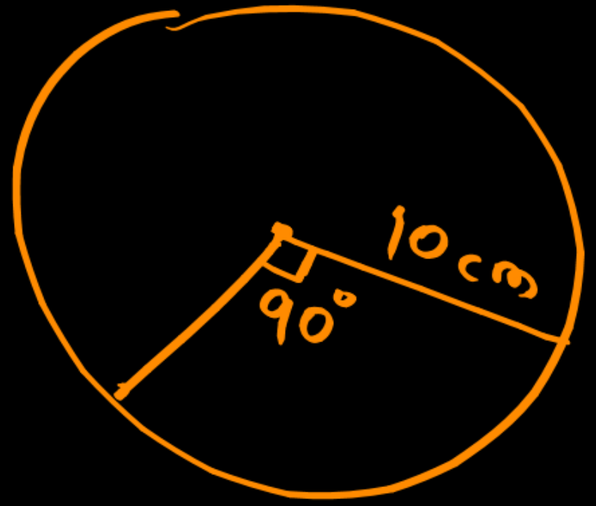
Q. Find the area of a sector (in cm^2) subtending an angle of 90 degrees at the centre of a circle of radius 10 cm.

A. 25π B. 50π C. 100π D. 75π

$\frac{\theta}{360} \pi R^2$

$\frac{90}{360} \pi \times 100$

$\frac{1}{4} \times 25$



एक समांतर श्रेढ़ी (AP) के प्रथम तीन पदों का योगफल 30 है तथा इसके अन्तिम तीन पदों का योगफल 36 है । यदि इसका प्रथम पद 9 है, तो इसके पदों की संख्या है :

The sum of the first three terms of an AP is 30 and the sum of the last three terms is 36. If the first term is 9, then the number of terms is :

(A) 10 (B) 5

(C) 6 (D) 13

$9 \quad 10$

$a \quad a+d \quad a+2d$

$3a + 3d = 30$

$3(a+d) = 30$

$\boxed{a+d = 10}$

$9 + d = 10$

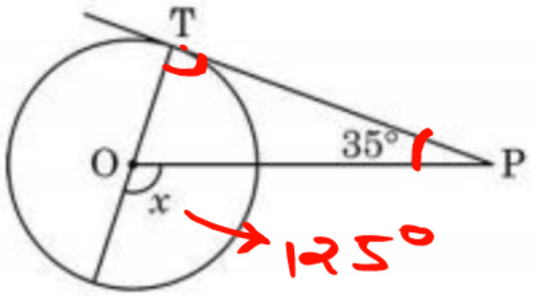
$\boxed{d = 1}$

$a+(n-3)d + a+(n-2)d + a+(n-1)d = 36$

$3a + 3n - 6 = 36$

$3n = 15 \rightarrow \boxed{n = 5}$

In the given figure, if PT is a tangent to a circle with centre O and $\angle TPO = 35°$, then the measure of $\angle x$ is :



(A) 110°

(B) 115°

(C) 120°

(D) 125°

Calculate the mean of the following data :

Class :	4 – 6	7 – 9	10 – 12	13 – 15
Frequency :	5	4	9	10

$$\bar{x} = \frac{\Sigma f_i x_i}{\Sigma f_i}$$

(x) Mid Point	F	$f_i x_i$
5	5	25
8	4	32
11	9	99
14	10	140
	$\Sigma F = 28$	$\Sigma fx = 296$

$$\bar{x} = \frac{296}{28}$$

$$\bar{x} = \frac{74}{7}$$

यदि पाँच प्रेक्षणों $x, x+2, x+4, x+6$ तथा $x+8$ का माध्य 11 है, तो x का मान है :

If the mean of five observations $x, x+2, x+4, x+6$ and $x+8$ is 11, then the value of x is :

(A) 4

(B) 7

(C) 11

(D) 6

$$\text{Mean} = \frac{\text{Sum}}{N}$$

$$\frac{5x + 20}{5} = 11$$

$$5x = 55 - 20$$

$$5x = 35$$

$$x = 7$$

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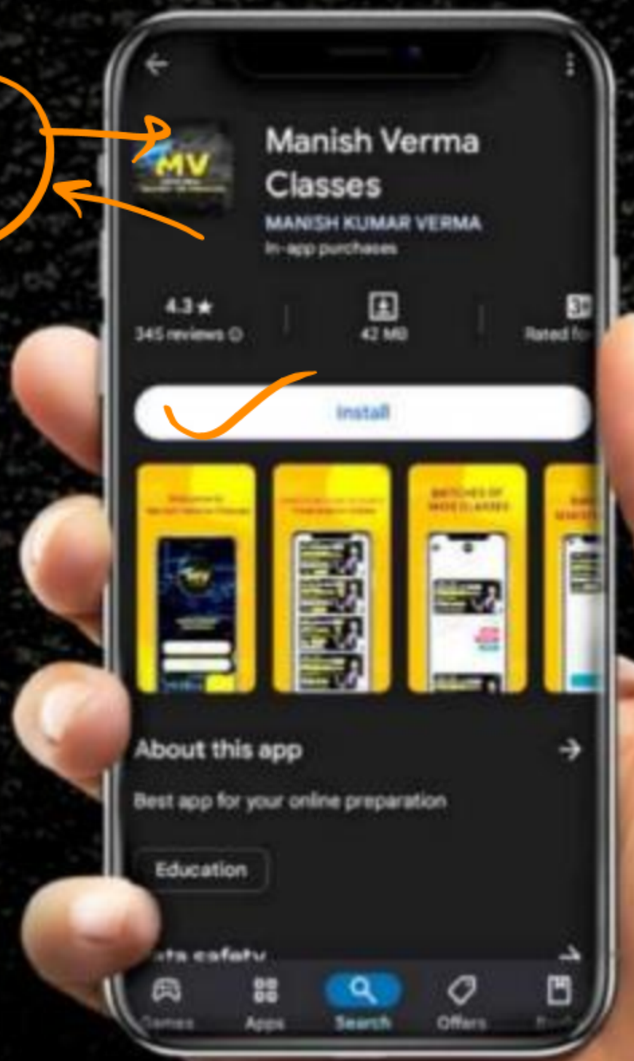


THANK YOU
FOR
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