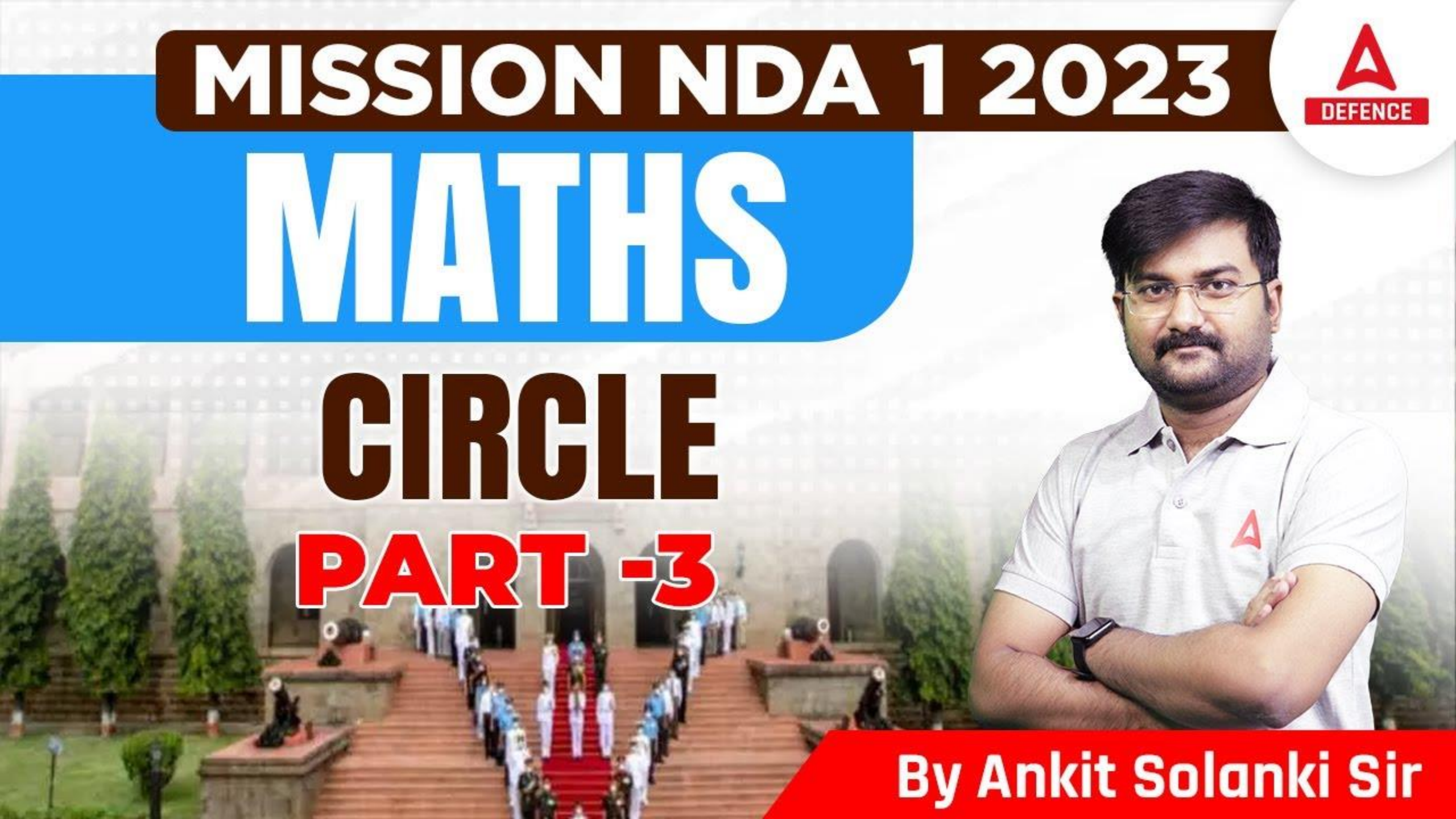
MISSION NDA 1 2023

DEFENCE

MATHS

CIRCLE

PART -3



By Ankit Solanki Sir

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Q. 1

The coordinates of the centre and the radius of the circle $x^2 + y^2 + 4x - 6y - 36 = 0$ are respectively, given by

वृत्त $x^2 + y^2 + 4x - 6y - 36 = 0$ के केंद्र के निर्देशांक और त्रिज्या क्रमशः दिए गए हैं

(1) (-4, 6) and 6 **(2) (4, -6) and 7**

(3) (2, 3) and 6 **(4) (-2, 3) and 7**

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Q. 2

The equation $x^2 + y^2 + 2gx + 2fy + c = 0$, represents a circle of non-zero radius, if

समीकरण $x^2 + y^2 + 2gx + 2fy + c = 0$, शून्येतर त्रिज्या वाले वृत्त को निरूपित करता है, यदि

(1) $g^2 + f^2 > c$ (2) $g^2 + f^2 < c$

(3) $g^2 > f^2 + c$ (4) $g^2 < f^2 + c$

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Q. 3

If $g^2 + f^2 = c$, then the equation $x^2 + y^2 + 2gx + 2fy + c = 0$ will represent

यदि $g^2 + f^2 = c$, तो समीकरण $x^2 + y^2 + 2gx + 2fy + c = 0$ प्रदर्शित करेगा

(1) a circle of radius g

(2) a circle of radius f

(3) a circle of diameter $\sqrt{c}$

(4) a circle of radius 0

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Q. 4

The circle $x^2 + y^2 - 8x + 4y + 4 = 0$ touches

वृत्त $x^2 + y^2 - 8x + 4y + 4 = 0$ स्पर्श करता है

(1) x-axis

(2) y-axis

(3) Both axes

(4) Neither x-axis nor y-axis

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Q. 5

The value of , for which the circle $x^2 + y^2 + 2x + 6y + 1 = 0$ intersects the circle $x^2 + y^2 + 4x + 2y = 0$ orthogonally, is

का मान, जिसके लिए वृत्त $x^2 + y^2 + 2x + 6y + 1 = 0$ वृत्त $x^2 + y^2 + 4x + 2y = 0$ को लंबवत रूप से काटता है, है

(1) 11/8 (2) -1

(3) -5/4 (4) 5/2

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Q. 6

The two circles $x^2 + y^2 - 2x + 6y + 6 = 0$ and $x^2 + y^2 - 5x + 6y + 15 = 0$

दो वृत्त $x^2 + y^2 - 2x + 6y + 6 = 0$ और $x^2 + y^2 - 5x + 6y + 15 = 0$

(1) Intersect

(2) are concentric

(3) Touch internally

(4) Touch externally

Q. 7

The lines $2x - 3y = 5$ and $3x - 4y = 7$ are diameters of a circle having area as 154 sq units. Then, the equation of the circle is

रेखाएँ $2x - 3y = 5$ और $3x - 4y = 7$ एक वृत्त के व्यास हैं जिसका क्षेत्रफल 154 वर्ग इकाई है। तब, वृत्त का समीकरण है

(1) $x^2 + y^2 - 2x + 2y = 62$

(2) $x^2 + y^2 + 2x - 2y = 47$

(3) $x^2 + y^2 - 2x + 2y = 47$

(4) $x^2 + y^2 + 2x + 2y = 62$

Q. 8

A circle is drawn to cut a chord of length 2a units along X-axis and to touch the Y-axis. The locus of the centre of the circles

X-अक्ष के अनुदिश लंबाई 2a इकाई की एक जीवा को काटने और Y-अक्ष को स्पर्श करने के लिए एक वृत्त खींचा जाता है। मंडलियों के केंद्र का स्थान

(1) $x^2 + y^2 = a^2$ (2) $x^2 - y^2 = a^2$

(3) $x + y = a^2$ (4) $x^2 - y^2 = 4a^2$

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Q. 9

If the extremities of a diameter of a circle are (0, 0) and $(a^3, 1/a^3)$, then the circle passes through, which one of the following points?

यदि किसी वृत्त के व्यास के सिरे (0, 0) और $(a^3, 1/a^3)$ हैं, तो वृत्त निम्नलिखित में से किस बिंदु से होकर गुजरता है?

(1) $(a^2, 1/a^2)$ (2) $(a, 1/a)$

(3) $(a, -a)$ (4) $(1/a, a)$

Q. 10

What is the equation of a circle whose centre lies on the x-axis at a distance *h* from the origin and the circle passes through the origin?

उस वृत्त का समीकरण क्या है जिसका केंद्र मूल बिंदु से *h* दूरी पर *x*-अक्ष पर स्थित है और वृत्त मूल बिंदु से होकर गुजरता है?

(1) $x^2 + y^2 - 2hx = 0$

(2) $x^2 + y^2 - 2hx + h^2 = 0$

(3) $x^2 + y^2 + 2hxy = 0$

(4) $x^2 + y^2 - h^2 = 0$

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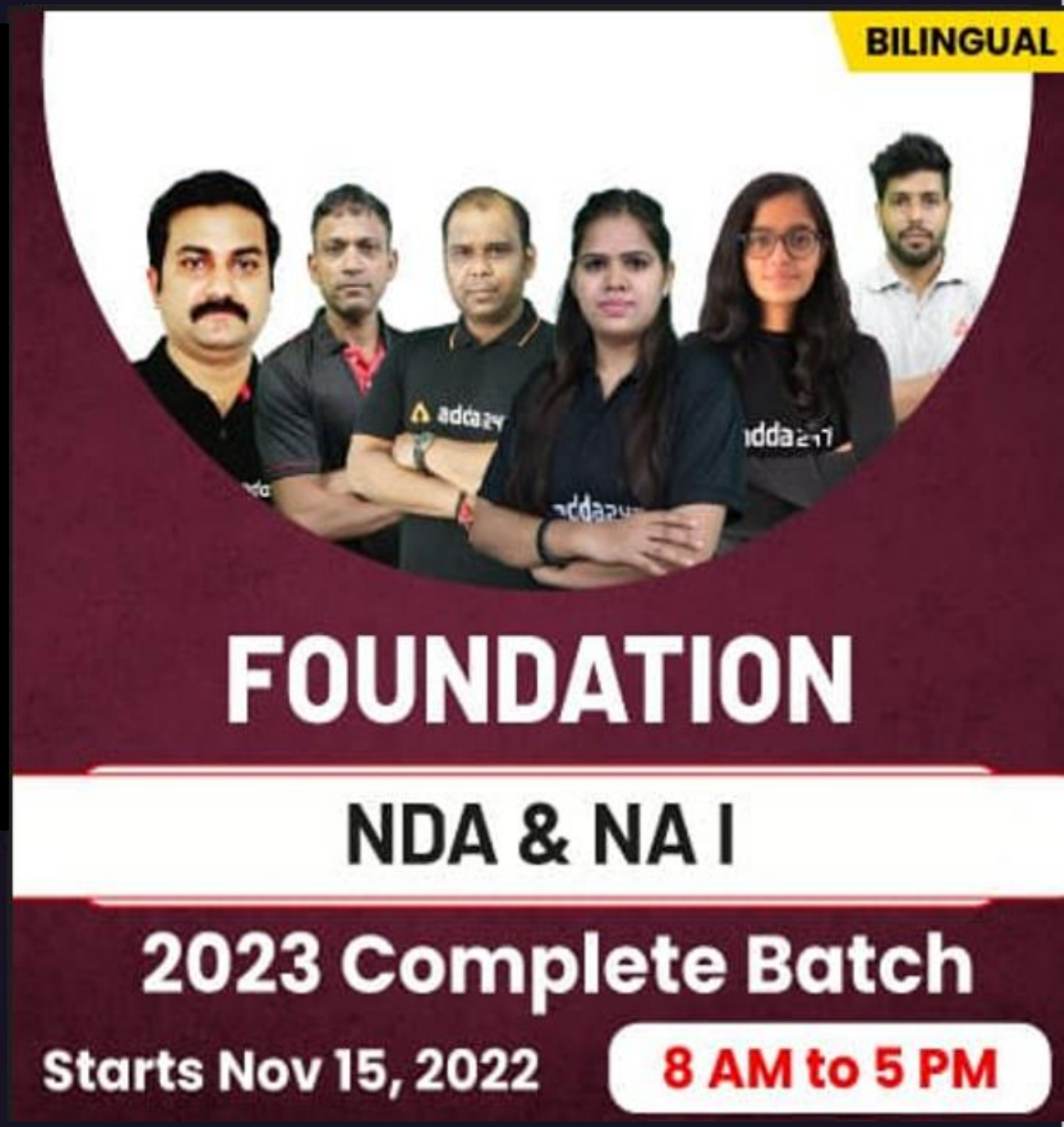

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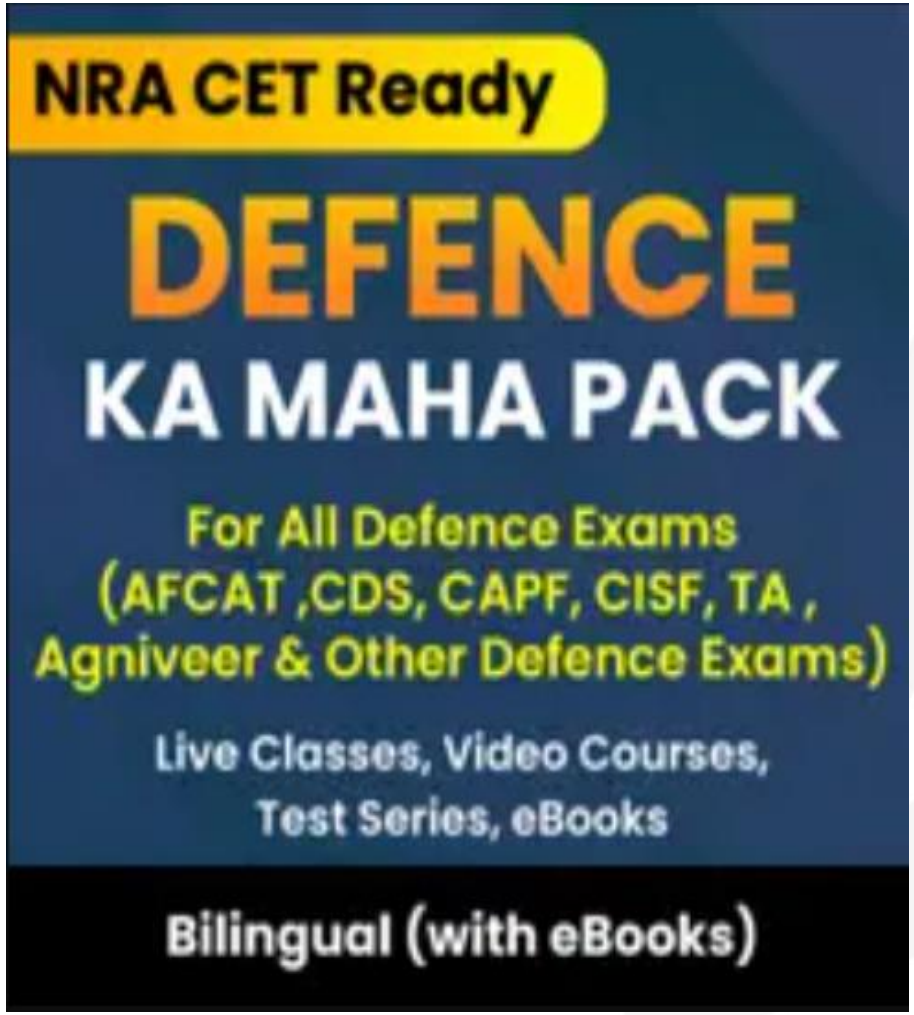

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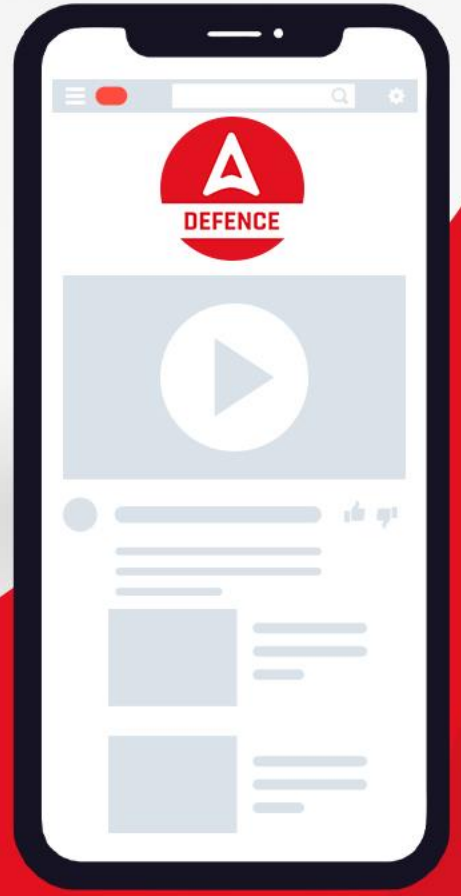

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