NDA 2 2024

LIVE

MATHS REVISION

CLASS 3

NAVJYOTI SIR

SSBCrack EXAMS

07 August 2024 Live Classes Schedule

8:00AM	07 AUGUST 2024 DAILY CURRENT AFFAIRS	RUBY MA'AM
9:00AM	07 AUGUST 2024 DAILY DEFENCE UPDATES	DIVYANSHU SIR

SSB INTERVIEW LIVE CLASSES

9:00AM	INTRODUCTION OF PPDT & PRACTICE	ANURADHA MA'AM

AFCAT 2 2024 LIVE CLASSES

1:00PM	MAHA MARATHON SESSION - PART 3	

NDA 2 2024 LIVE CLASSES

11:00AM	GK - HISTORY REVISION - CLASS 2	RUBY MA'AM
12:00PM	PHYSICS REVISION - CLASS 2	NAVJYOTI SIR
1:00PM	MATHS REVISION - CLASS 3	NAVJYOTI SIR
2:00PM	BIOLOGY REVISION - CLASS 3	SHIVANGI MA'AM

CDS 2 2024 LIVE CLASSES

11:00AM	GK - HISTORY REVISION - CLASS 3	RUBY MA'AM
12:00PM	PHYSICS REVISION - CLASS 3	NAVJYOTI SIR
2:00PM	BIOLOGY REVISION - CLASS 3	SHIVANGI MA'AM
3:00PM	MATHS REVISION - CLASS 3	NAVJYOTI SIR

REVISION TOPICS :

- Quadratic Equations and Inequalities
- Trigonometric Functions

SSBCrack EXAMS

Q) For what value of x does the equation $4 \sin x + 3 \sin 2x - 2 \sin 3x + \sin 4x = 2\sqrt{3}$ hold?

(a) $\frac{\pi}{6}$ (b) $\frac{\pi}{4}$ (c) $\frac{\pi}{3}$ (d) $\frac{\pi}{2}$

(put options in above eqn),

$4\sin x + 3\sin 2x - 2\sin 3x + \sin 4x$

(a) $x = \frac{\pi}{6}$ $\left(4\left(\frac{1}{2}\right) + 3\left(\frac{\sqrt{3}}{2}\right) - 2 + \left(+\frac{\sqrt{3}}{2}\right) = \frac{4\sqrt{3}}{2} \right.$

$= 2\sqrt{3}$

(b) $\frac{4}{\sqrt{2}} + 3 - \frac{4}{\sqrt{2}} + 0$ $(\times)$

=

(c) $\frac{4\sqrt{3}}{2} + \left(-\frac{3\sqrt{3}}{2}\right) - 0 + \left(-\frac{\sqrt{3}}{2}\right)$

$\frac{\sqrt{3}}{2} - \frac{\sqrt{3}}{2} = 0$

Q) For what value of x does the equation $4 \sin x + 3 \sin 2x - 2 \sin 3x + \sin 4x = 2\sqrt{3}$ hold?

(a) $\frac{\pi}{6}$ (b) $\frac{\pi}{4}$ (c) $\frac{\pi}{3}$ (d) $\frac{\pi}{2}$

Ans: (a)

Q) Let $\sin^{-1}x + \sin^{-1}y + \sin^{-1}z = \frac{3\pi}{2}$ for $0 \leq x, y, z \leq 1$. What is the value of $x^{1000} + y^{1001} + z^{1002}$?

(a) 0
(b) 1
(c) 3
(d) 6

$\sin^{-1}x = \frac{\pi}{2}$

$\sin^{-1}y = \frac{\pi}{2}$

$\sin^{-1}z = \frac{\pi}{2}$

$x = y = z = 1$

Q) Let $\sin^{-1}x + \sin^{-1}y + \sin^{-1}z = \frac{3\pi}{2}$

for $0 \leq x, y, z \leq 1$. What is the value of $x^{1000} + y^{1001} + z^{1002}$?

(a) 0 (b) 1
(c) 3 (d) 6

Ans: (c)

Q) If $\alpha+\beta+\gamma=2\pi$, then

(a) $\tan\frac{\alpha}{2}+\tan\frac{\beta}{2}+\tan\frac{\gamma}{2}=\tan\frac{\alpha}{2}\tan\frac{\beta}{2}\tan\frac{\gamma}{2}$

(b) $\tan\frac{\alpha}{2}\tan\frac{\beta}{2}+\tan\frac{\beta}{2}\tan\frac{\gamma}{2}+\tan\frac{\gamma}{2}\tan\frac{\alpha}{2}=1$

(c) $\tan\frac{\alpha}{2}+\tan\frac{\beta}{2}+\tan\frac{\gamma}{2}=-\tan\frac{\alpha}{2}\tan\frac{\beta}{2}\tan\frac{\gamma}{2}$

(d) None of these.

$\tan\left(\frac{\alpha}{2}+\frac{\beta}{2}\right)=\frac{\tan\frac{\alpha}{2}+\tan\frac{\beta}{2}}{1-\tan\frac{\alpha}{2}\tan\frac{\beta}{2}}$

$\tan\left(\pi-\frac{\gamma}{2}\right)=$

$\frac{\alpha}{2}+\frac{\beta}{2}+\frac{\gamma}{2}=\pi$

$-\tan\frac{\gamma}{2}=$

$\pi-\frac{\gamma}{2}=\frac{\alpha}{2}+\frac{\beta}{2}$

Q) If $\alpha+\beta+\gamma=2\pi$, then

(a) $\tan\frac{\alpha}{2}+\tan\frac{\beta}{2}+\tan\frac{\gamma}{2}=\tan\frac{\alpha}{2}\tan\frac{\beta}{2}\tan\frac{\gamma}{2}$

(b) $\tan\frac{\alpha}{2}\tan\frac{\beta}{2}+\tan\frac{\beta}{2}\tan\frac{\gamma}{2}+\tan\frac{\gamma}{2}\tan\frac{\alpha}{2}=1$

(c) $\tan\frac{\alpha}{2}+\tan\frac{\beta}{2}+\tan\frac{\gamma}{2}=-\tan\frac{\alpha}{2}\tan\frac{\beta}{2}\tan\frac{\gamma}{2}$

(d) None of these.

Ans: (a)

Q) If $A = \sin^2 x + \cos^4 x$, then for all real x :

(a) $\frac{13}{16} \le A \le 1$

(b) $1 \le A \le 2$

(c) $\frac{3}{4} \le A \le \frac{13}{16}$

(d) $\frac{3}{4} \le A \le 1$

$x = 45°$, (min.)

$A = \frac{1}{2} + \frac{1}{4} = \underline{\left(\frac{3}{4}\right)}$

$x = 0°$ or $90°$

$A = 0 + 1 = 1$

Q) If $A = \sin^2 x + \cos^4 x$, then for all real x :

(a) $\frac{13}{16} \le A \le 1$

(b) $1 \le A \le 2$

(c) $\frac{3}{4} \le A \le \frac{13}{16}$

(d) $\frac{3}{4} \le A \le 1$

Ans: (d)

Q) What is the value of $\dfrac{1-2\sin^2\theta\cos^2\theta}{\sin^4\theta+\cos^4\theta}+4$ equal to?

(a) 0 (b) 1 (c) 2 (d) 5

$$\frac{1-2\sin^2\theta\cos^2\theta}{(\sin^2\theta)^2+(\cos^2\theta)^2}+4 = 1+4 = 5$$

$$(\sin^2\theta+\cos^2\theta)^2-2\sin^2\theta\cos^2\theta$$

$$1-2\sin^2\theta\cos^2\theta$$

Q) What is the value of $\frac{1-2\sin^2\theta\cos^2\theta}{\sin^4\theta+\cos^4\theta}+4$ equal to?

(a) 0 (b) 1 (c) 2 (d) 5

Ans: (d)

Q) The value of the expression $\sqrt{3}\ \text{cosec}\ 20° - \sec 20°$ is equal to

(a) 2

(b) $2 \sin 20°/\sin 40°$

(c) 4

(d) $4 \sin 20°/\sin 40°$

Q) The value of the expression $\sqrt{3}\ \text{cosec}\ 20° - \sec 20°$ is equal to

(a) 2

(b) $2 \sin 20°/\sin 40°$

(c) 4

(d) $4 \sin 20°/\sin 40°$

Ans: (c)

Q) If $0 < \theta < 90°$, $\sin\theta = \frac{3}{5}$ and $x = \cot\theta$, then what is the value of $1 + 3x + 9x^2 + 27x^3 + 81x^4 + 243x^5$?

(*a*) 941 (*b*) 1000 (*c*) 1220 (*d*) 1365

Q) If $0 < \theta < 90°$, $\sin\theta = \frac{3}{5}$ and $x = \cot\theta$, then what is the value of $1 + 3x + 9x^2 + 27x^3 + 81x^4 + 243x^5$?

(*a*) 941 (*b*) 1000 (*c*) 1220 (*d*) 1365

Ans: (d)

Q) If $\alpha + \beta = \pi/2$ and $\beta + \gamma = \alpha$, then $\tan\alpha$ equals

(a) $2(\tan\beta + \tan\gamma)$ (b) $\tan\beta + \tan\gamma$

(c) $\tan\beta + 2\tan\gamma$ (d) $2\tan\beta + \tan\gamma$

Q) If $\alpha + \beta = \pi/2$ and $\beta + \gamma = \alpha$, then $\tan\alpha$ equals

(a) $2(\tan\beta + \tan\gamma)$ (b) $\tan\beta + \tan\gamma$

(c) $\tan\beta + 2\tan\gamma$ (d) $2\tan\beta + \tan\gamma$

Ans: (c)

Q) What is the simplified value of $\text{cosec}^6 A - \cot^6 A - 3\,\text{cosec}^2 A \cot^2 A$?

(a) -2 (b) -1 (c) 0 (d) 1

Q) What is the simplified value of $\text{cosec}^6 A - \cot^6 A - 3\,\text{cosec}^2 A \cot^2 A$?

(a) -2 (b) -1 (c) 0 (d) 1

Ans: (d)

Q) What is the least value of $9\sin^2\theta + 16\cos^2\theta$?

(*a*) 0 (*b*) 9 (*c*) 16 (*d*) 25

Q) What is the least value of $9\sin^2\theta + 16\cos^2\theta$?

(*a*) 0 (*b*) 9 (*c*) 16 (*d*) 25

Ans: (b)

Q) If $A + B + C = \pi$, then what is $\cos(A + B) + \cos C$ equal to ?

(a) 0
(b) $2 \cos C$
(c) $\cos C - \sin C$
(d) $2 \sin C$

Q) If $A + B + C = \pi$, then what is $\cos(A + B) + \cos C$ equal to ?

(a) 0
(b) $2 \cos C$
(c) $\cos C - \sin C$
(d) $2 \sin C$

Ans: (a)

Q) What is the minimum value of $\cos^3\theta + \sec^3\theta$ where $0° \leq 90°$?

(a) 0
(b) 1
(c) 2
(d) None of these

Q) What is the minimum value of $\cos^3\theta + \sec^3\theta$ where $0° \leq 90°$?

(a) 0
(b) 1
(c) 2
(d) None of these

Ans: (c)

Q) If α and β are positive angles such that $\alpha + \beta = \frac{\pi}{4}$, then what is $(1 + \tan\alpha)(1 + \tan\beta)$ equal to?

(a) 0 (b) 1

(c) 2 (d) 3

Q) If α and β are positive angles such that $\alpha + \beta = \frac{\pi}{4}$, then what is $(1 + \tan\alpha)(1 + \tan\beta)$ equal to?

(a) 0 (b) 1

(c) 2 (d) 3

Ans: (c)

Q) Consider the following inequalities:

1. $\sin 1° < \cos 57°$
2. $\cos 60° > \sin 57°$

Which of the above is/are correct?

(*a*) 1 only (*b*) 2 only

(*c*) Both 1 and 2 (*d*) Neither 1 nor 2

Q) Consider the following inequalities:

1. $\sin 1° < \cos 57°$
2. $\cos 60° > \sin 57°$

Which of the above is/are correct?

(*a*) 1 only (*b*) 2 only

(*c*) Both 1 and 2 (*d*) Neither 1 nor 2

Ans: (a)

Q) The value of

$$\sin\theta + \sin(\theta + 120^\circ) + \sin(\theta + 240^\circ) \text{ is equal to}$$

(a) 0
(b) 1
(c) $\sqrt{3}$
(d) 2

Q) The value of

$$\sin\theta + \sin(\theta + 120^\circ) + \sin(\theta + 240^\circ) \text{ is equal to}$$

(a) 0 (b) 1

(c) $\sqrt{3}$ (d) 2

Ans: (a)

Q) For $x \in (0, \pi)$, the equation $\sin x + 2\sin 2x - \sin 3x = 3$ has

(a) infinitely many solutions
(b) three solutions
(c) one solution
(d) no solution

Q) For $x \in (0, \pi)$, the equation $\sin x + 2\sin 2x - \sin 3x = 3$ has

(a) infinitely many solutions
(b) three solutions
(c) one solution
(d) no solution

Ans: (d)

Q) The number of real roots for the equation $x^2 + 9|x| + 20 = 0$ is

(a) Zero
(b) One
(c) Two
(d) Three

+ve
+ve
+ve

(3 positive terms cannot add up to zero)

Q) The number of real roots for the equation $x^2 + 9|x| + 20 = 0$ is

(a) Zero
(b) One
(c) Two
(d) Three

Ans: (a)

Q) If the roots of the equation $x^2 + px + q = 0$ are $\tan 19°$ and $\tan 26°$, then which one of the following is correct ?

(a) $q - p = 1$ (b) $p - q = 1$

(c) $p + q = 2$ (d) $p + q = 3$

α β

$\alpha + \beta = \frac{-p}{1} = -p$

$\tan 19° + \tan 26° = -p$

$\tan 19° \tan 26° = q$

$\tan(19° + 26°) = \frac{-p}{1-q}$

$\tan 45°(1-q) = -p$

$q - 1 = p$

$q - p = 1$

Q) If the roots of the equation $x^2 + px + q = 0$ are $\tan 19°$ and $\tan 26°$, then which one of the following is correct ?

(a) $q - p = 1$
(b) $p - q = 1$
(c) $p + q = 2$
(d) $p + q = 3$

Ans: (a)

Q) Let α and β be the roots of the equation

$x^2-(1-2a^2)x+(1-2a^2)=0$

Under what condition is $\frac{1}{\alpha^2}+\frac{1}{\beta^2}<1$?

$\frac{\alpha^2+\beta^2}{\alpha^2\beta^2} = \frac{(\alpha+\beta)^2-2\alpha\beta}{(\alpha\beta)^2} < 1$

(a) $a^2<\frac{1}{2}$

(b) $a^2>\frac{1}{2}$

(c) $a^2>1$

(d) $a^2\in\left(\frac{1}{3},\frac{1}{2}\right)$

$\alpha+\beta = 1-2a^2$

$\alpha\beta = 1-2a^2$

Q) Let α and β be the roots of the equation

$x^2-(1-2a^2)x+(1-2a^2)=0$

Under what condition is $\frac{1}{\alpha^2}+\frac{1}{\beta^2}<1$?

(a) $a^2<\frac{1}{2}$

(b) $a^2>\frac{1}{2}$

(c) $a^2>1$

(d) $a^2\in\left(\frac{1}{3},\frac{1}{2}\right)$

Ans: (a)

Q) If one root of the equation $(1-m)x^2+1x+1=0$ is double the other and l is real, then what is the greatest value of m?

(a) $-\frac{9}{8}$

(b) $\frac{9}{8}$

(c) $-\frac{8}{9}$

(d) $\frac{8}{9}$

Q) If one root of the equation $(1-m)x^2+lx+1=0$ is double the other and l is real, then what is the greatest value of m?

(a) $-\frac{9}{8}$

(b) $\frac{9}{8}$

(c) $-\frac{8}{9}$

(d) $\frac{8}{9}$

Ans: (b)

Q) If the roots of the equation $x^2 - nx + m = 0$ differ by 1, then

(a) $n^2 - 4m - 1 = 0$
(b) $n^2 + 4m - 1 = 0$
(c) $m^2 + 4n + 1 = 0$
(d) $m^2 - 4n - 1 = 0$

$2\alpha + 1 = n$

$\alpha^2 + \alpha = m$

Q) If the roots of the equation $x^2 - nx + m = 0$ differ by 1, then

(a) $n^2 - 4m - 1 = 0$
(b) $n^2 + 4m - 1 = 0$
(c) $m^2 + 4n + 1 = 0$
(d) $m^2 - 4n - 1 = 0$

Ans: (a)

Directions The equation formed by multiplying each root of $ax^2 + bx + c = 0$ by 2 is $x^2 + 36x + 24 = 0$.

Q) What is the value of $b : c$?

(a) 3 : 1 (b) 1 : 2 (c) 1 : 3 (d) 3 : 2

Q) What is the value of $b : c$?

(a) 3 : 1 (b) 1 : 2 (c) 1 : 3 (d) 3 : 2

Ans: (a)

Q) Which one of the following is correct?

(a) $bc = a^2$

(b) $bc = 36a^2$

(c) $bc = 72a^2$

(d) $bc = 108a^2$

Q) Which one of the following is correct?

(a) $bc = a^2$

(b) $bc = 36a^2$

(c) $bc = 72a^2$

(d) $bc = 108a^2$

Ans: (d)

Q) If $x^2 + x + 1 = 0$, then what is the value of $x^{199} + x^{200} + x^{201}$?

(a) – 1
(b) 0
(c) 1
(d) 3

Q) If $x^2 + x + 1 = 0$, then what is the value of $x^{199} + x^{200} + x^{201}$?

(a) – 1
(b) 0
(c) 1
(d) 3

Ans: (b)

Directions Consider the equation $ax^2 + bx + c = 0$, then condition that

Q) One roots is the reciprocal of the other roots is

(a) $a = c$

(b) $a = -\frac{c}{2}$

(c) $2b = a$

(d) $b = a$

Q) One roots is the reciprocal of the other roots is

(a) $a = c$

(b) $a = -\frac{c}{2}$

(c) $2b = a$

(d) $b = a$

Ans: (a)

Q) One roots is n times the other root is

(a) $ac(n+1)^2 = b^2 n$

(b) $ab^2(n+1)^2$

(c) $ac(n+2)^2 = b^2$

(d) $4a^2 = b^2$

Q) One roots is n times the other root is

(a) $ac(n+1)^2 = b^2 n$

(b) $ab^2(n+1)^2$

(c) $ac(n+2)^2 = b^2$

(d) $4a^2 = b^2$

Ans: (a)

Q) $f(x) = x^2 + 2\alpha x + 1$ and α is a root of the equation $f(x) = 0$, where α is real.

Which one of the following is correct ?

(a) $f(\alpha) = 0$ and $f(1/\alpha) \neq 0$

(b) $f(\alpha) = 0$ and $f(1/\alpha) = 0$

(c) $f(\alpha) \neq 0$ and $f(1/\alpha) = 0$

(d) $f(\alpha) \neq 0$ and $f(1/\alpha) \neq 0$

Q) $f(x) = x^2 + 2\alpha x + 1$ and α is a root of the equation $f(x) = 0$, where α is real.

Which one of the following is correct ?

(a) $f(\alpha) = 0$ and $f(1/\alpha) \neq 0$

(b) $f(\alpha) = 0$ and $f(1/\alpha) = 0$

(c) $f(\alpha) \neq 0$ and $f(1/\alpha) = 0$

(d) $f(\alpha) \neq 0$ and $f(1/\alpha) \neq 0$

Ans: (b)

Q) If p and q are the non-zero roots of the equation $x^2 + px + q = 0$, then how many possible values can q have?

(a) Nil
(b) One
(c) Two
(d) Three

Q) If p and q are the non-zero roots of the equation $x^2 + px + q = 0$, then how many possible values can q have?

(a) Nil
(b) One
(c) Two
(d) Three

Ans: (b)

Q) What is the value of

$$\sqrt{5\sqrt{5\sqrt{5\sqrt{....\infty}}}} \ ?$$

(a) 5

(b) $\sqrt{5}$

(c) 1

(d) $(5)^{1/4}$

Q) What is the value of

$$\sqrt{5\sqrt{5\sqrt{5\sqrt{....\infty}}}}\ ?$$

(a) 5

(b) $\sqrt{5}$

(c) 1

(d) $(5)^{1/4}$

Ans: (a)

Q) If the roots of the equation $x^2 - bx + c = 0$ are two consecutive integers, then what is the value of $b^2 - 4c$?

(a) 1 (b) 2

(c) –2 (d) 3

Q) If the roots of the equation $x^2 - bx + c = 0$ are two consecutive integers, then what is the value of $b^2 - 4c$?

(a) 1 (b) 2

(c) –2 (d) 3

Ans: (a)

Q) If the roots of the quadratic equation $x^2 + 2x + k = 0$ are real, then

(a) $k < 0$
(b) $k \leq 0$
(c) $k < 1$
(d) $k \leq 1$

Q) If the roots of the quadratic equation $x^2 + 2x + k = 0$ are real, then

(a) $k < 0$
(b) $k \leq 0$
(c) $k < 1$
(d) $k \leq 1$

Ans: (d)

Q) If $\sin\theta$ and $\cos\theta$ are the roots of the equation $ax^2 + bx + c = 0$, then which one of the following is correct?

(a) $a^2 + b^2 - 2ac = 0$

(b) $-a^2 + b^2 + 2ac = 0$

(c) $a^2 - b^2 + 2ac = 0$

(d) $a^2 + b^2 + 2ac = 0$

Q) If $\sin\theta$ and $\cos\theta$ are the roots of the equation $ax^2 + bx + c = 0$, then which one of the following is correct?

(a) $a^2 + b^2 - 2ac = 0$

(b) $-a^2 + b^2 + 2ac = 0$

(c) $a^2 - b^2 + 2ac = 0$

(d) $a^2 + b^2 + 2ac = 0$

Ans: (c)

Q) In solving a problem that reduces to a quadratic equation, one student makes a mistake in the constant term and obtains 8 and 2 for roots. Another student makes a mistake only in the coefficient of first-degree term and finds –9 and –1 for roots. The correct equation is

(a) $x^2 - 10x + 9 = 0$

(b) $x^2 - 10x - 9 = 0$

(c) $x^2 - 10x + 16 = 0$

(d) $x^2 - 8x - 9 = 0$

Q) In solving a problem that reduces to a quadratic equation, one student makes a mistake in the constant term and obtains 8 and 2 for roots. Another student makes a mistake only in the coefficient of first-degree term and finds –9 and –1 for roots. The correct equation is

(a) $x^2 - 10x + 9 = 0$ (b) $x^2 - 10x - 9 = 0$

(c) $x^2 - 10x + 16 = 0$ (d) $x^2 - 8x - 9 = 0$

Ans: (a)

Q) If α and β are the roots of the equation $3x^2 + 2x + 1 = 0$, then the equation whose roots are $\alpha + \beta^{-1}$ and $\beta + \alpha^{-1}$ is

(a) $3x^2 + 8x + 16 = 0$

(b) $3x^2 - 8x - 16 = 0$

(c) $3x^2 + 8x - 16 = 0$

(d) $x^2 + 8x + 16 = 0$

Q) If α and β are the roots of the equation $3x^2 + 2x + 1 = 0$, then the equation whose roots are $\alpha + \beta^{-1}$ and $\beta + \alpha^{-1}$ is

(a) $3x^2 + 8x + 16 = 0$

(b) $3x^2 - 8x - 16 = 0$

(c) $3x^2 + 8x - 16 = 0$

(d) $x^2 + 8x + 16 = 0$

Ans: (a)

Q) The equation $|1 - x| + x^2 = 5$ has

(a) a rational root and an irrational root
(b) two rational roots
(c) two irrational roots
(d) no real roots

Q) The equation $|1 - x| + x^2 = 5$ has

(a) a rational root and an irrational root
(b) two rational roots
(c) two irrational roots
(d) no real roots

Ans: (a)

Q) Let two numbers have arithmetic mean 9 and geometric mean 4. Then these numbers are the roots of the quadratic equation

(a) $x^2 - 18x - 16 = 0$

(b) $x^2 - 18x + 16 = 0$

(c) $x^2 + 18x - 16 = 0$

(d) $x^2 + 18x + 16 = 0$

Q) Let two numbers have arithmetic mean 9 and geometric mean 4. Then these numbers are the roots of the quadratic equation

(a) $x^2 - 18x - 16 = 0$

(b) $x^2 - 18x + 16 = 0$

(c) $x^2 + 18x - 16 = 0$

(d) $x^2 + 18x + 16 = 0$

Ans: (b)

Which one of the following values of x, y satisfies the in equation $2x + 3y \leq 6; x \geq 0, y \geq 0$? **[NDA/NA 2007]**

(a) $x = 0, y = 3$ (b) $x = 1, y = 2$

(c) $x = 1, y = 1$ (d) $x = 4, y = 0$

Which one of the following values of x, y satisfies the in equation $2x + 3y \leq 6; x \geq 0, y \geq 0$? **[NDA/NA 2007]**

(a) $x = 0, y = 3$ (b) $x = 1, y = 2$

(c) $x = 1, y = 1$ (d) $x = 4, y = 0$

ANSWER : (c)

If x and y are real numbers such that $x > y$ and $|x| > |y|$, then which one of the following is correct? **[NDA/NA 2007]**

(a) $x > 0$ (b) $y > 0$ (c) $y < 0$ (d) $x < 0$

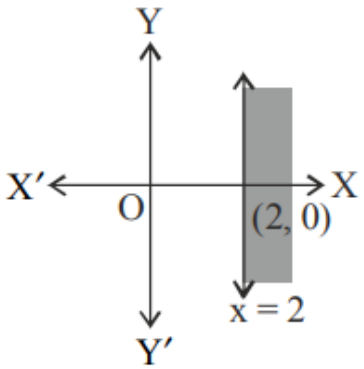
If x and y are real numbers such that $x > y$ and $|x| > |y|$, then which one of the following is correct? **[NDA/NA 2007]**

(a) $x > 0$ (b) $y > 0$ (c) $y < 0$ (d) $x < 0$

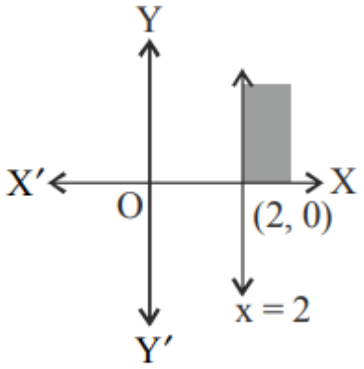
ANSWER : (a)

The graphical solution of $3x - 6 \geq 0$ is

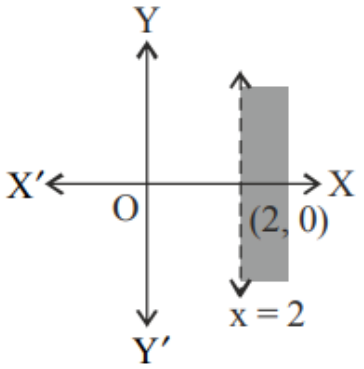
(a)



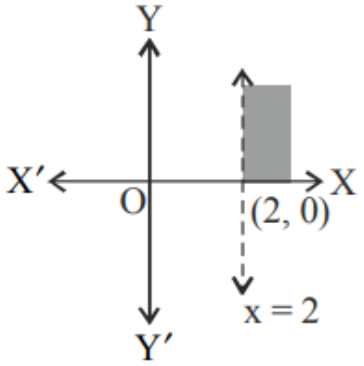
(b)



(c)

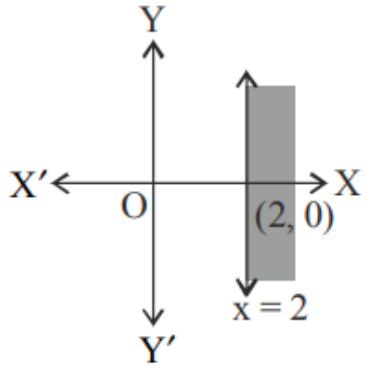


(d)

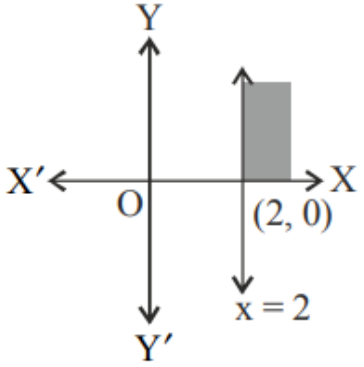


The graphical solution of $3x - 6 \geq 0$ is

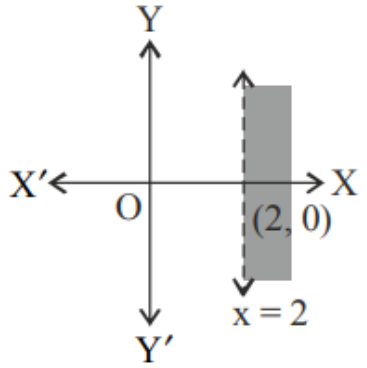
(a)



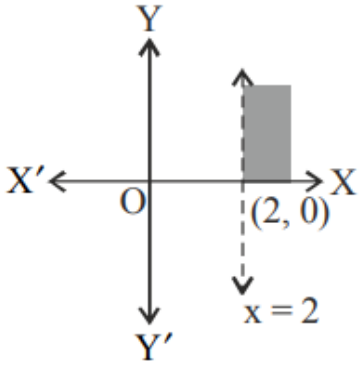
(b)



(c)



(d)



ANSWER : (a)

The set of real x satisfying the inequality $\frac{5-2x}{3} \leq \frac{x}{6} - 5$ is $[a, \infty)$. The value of 'a' is

(a) 2 (b) 4

(c) 6 (d) 8

ANSWER : (a)

Which of the following is the solution set of linear inequalities $2(x - 1) < x + 5$ and $3(x + 2) > 2 - x$?

(a) $(-1, 7]$ (b) $[-1, 7)$

(c) $(-1, 7)$ (d) $[-1, 7]$

Which of the following is the solution set of linear inequalities $2(x - 1) < x + 5$ and $3(x + 2) > 2 - x$?

(a) $(-1, 7]$ (b) $[-1, 7)$

(c) $(-1, 7)$ (d) $[-1, 7]$

ANSWER : (c)

If $1.5 \leq x \leq 4.5$, then which one of the following is correct?

[NDA/NA 2020-I]

(a) $(2x-3)(2x-9) > 0$ (b) $(2x-3)(2x-9) < 0$

(c) $(2x-3)(2x-9) \geq 0$ (d) $(2x-3)(2x-9) \leq 0$

If $1.5 \leq x \leq 4.5$, then which one of the following is correct?

[NDA/NA 2020-I]

(a) $(2x-3)(2x-9) > 0$ (b) $(2x-3)(2x-9) < 0$

(c) $(2x-3)(2x-9) \geq 0$ (d) $(2x-3)(2x-9) \leq 0$

ANSWER : (d)

What is the solution of $x \leq 4, y \geq 0$ and $x \leq -4, y \leq 0$?

[NDA/NA 2019-II]

(a) $x \geq -4, y \leq 0$

(b) $x \leq 4, y \geq 0$

(c) $x \leq -4, y = 0$

(d) $x \geq -4, y = 0$

What is the solution of $x \leq 4, y \geq 0$ and $x \leq -4, y \leq 0$?

[NDA/NA 2019-II]

(a) $x \geq -4, y \leq 0$

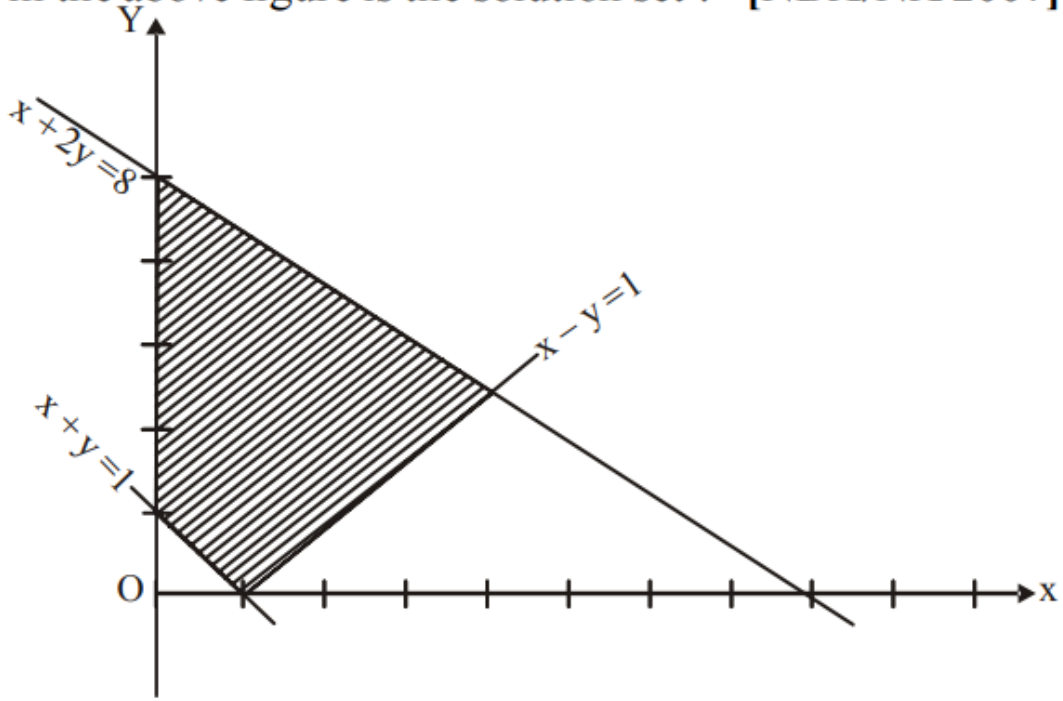
(b) $x \leq 4, y \geq 0$

(c) $x \leq -4, y = 0$

(d) $x \geq -4, y = 0$

ANSWER : (c)

What are the linear constraints for which the shaded area in the above figure is the solution set ? **[NDA/NA 2007]**



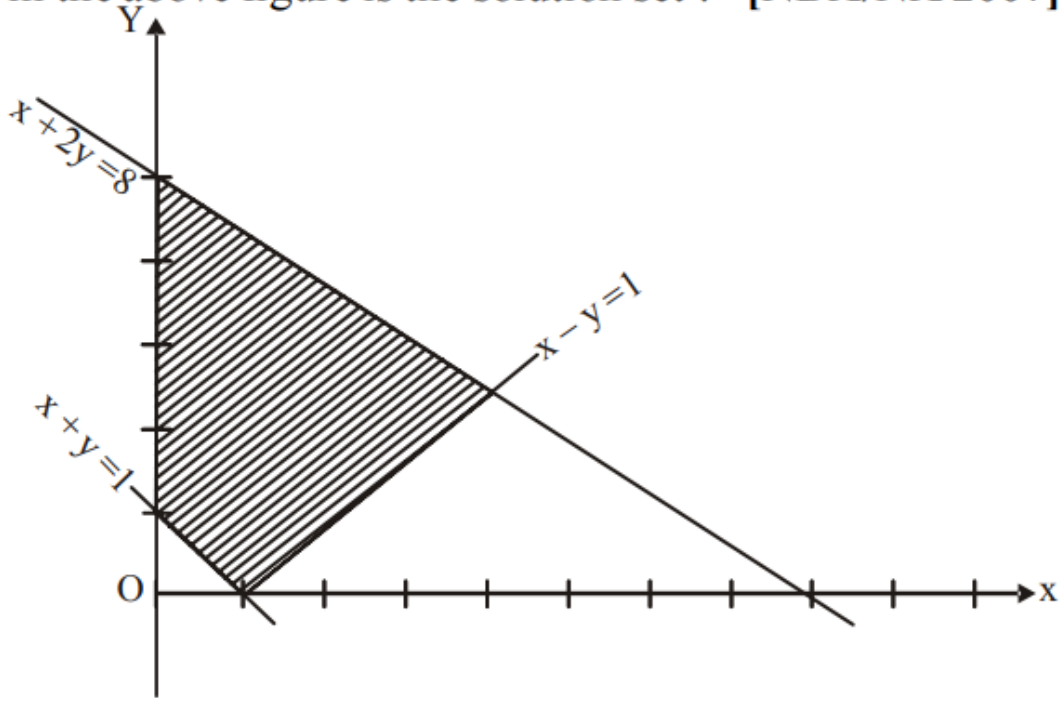
(a) $x - y \geq 1;\ x + 2y \leq 8;\ x + y \geq 1;\ x, y \geq 0$

(b) $x - y \leq 1;\ x + 2y \geq 8;\ x + y \leq 1;\ x, y \geq 0$

(c) $x - y \leq 1;\ x + 2y \leq 8;\ x + y \geq 1;\ x, y \geq 0$

(d) $x - y \leq 1;\ x + 2y \leq 8;\ x + y \leq 1;\ x, y \geq 0$

What are the linear constraints for which the shaded area in the above figure is the solution set ? **[NDA/NA 2007]**



(a) $x - y \geq 1;\ x + 2y \leq 8;\ x + y \geq 1;\ x, y \geq 0$

(b) $x - y \leq 1;\ x + 2y \geq 8;\ x + y \leq 1;\ x, y \geq 0$

(c) $x - y \leq 1;\ x + 2y \leq 8;\ x + y \geq 1;\ x, y \geq 0$

(d) $x - y \leq 1;\ x + 2y \leq 8;\ x + y \leq 1;\ x, y \geq 0$

ANSWER : (c)

NDA 2 2024

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- 2D GEOMETRY