8. ELIMINATION OF ANGLE

2025/26

Class: VIII. MATHEMATICS

FOUNDATION: SOLUTIONS

TEACHING TASK

JEE MAINS

01. Short trick method

Let $\theta = 45^\circ$

$\therefore \frac{1}{\sqrt{2}} + \frac{1}{\sqrt{2}} = P$ | $1 + 1 = Q$

$\Rightarrow \boxed{P = \sqrt{2}}$ | $\therefore \boxed{Q = 2}$

$\therefore Q(P^2 - 1) = 2((\sqrt{2})^2 - 1) = 2(2-1) = 2$

Ans. B

02 $a - b = \left(\frac{x}{\sqrt{2}} + \frac{y}{\sqrt{2}}\right) - \left(\frac{x}{\sqrt{2}} - \frac{y}{\sqrt{2}}\right)$

$= \frac{2y}{\sqrt{2}} = \sqrt{2}\,y$

Ans: B

03 $\sec\theta = a + \frac{1}{4a}$

$\Rightarrow 2\sec\theta = 2a + \frac{1}{2a}$

$(\sec\theta + \tan\theta) + (\sec\theta - \tan\theta) = 2a + \frac{1}{2a}$

Ans. B

$\Rightarrow \sec\theta + \tan\theta = 2a$

Short trick method

put $\theta = 0^\circ$

$m = a \mid n = 0$

$(m+n)^{\frac{2}{3}} + (m-n)^{\frac{2}{3}}$

$= (a)^{\frac{2}{3}} + (a-0)^{\frac{2}{3}} = 2 \cdot a^{\frac{2}{3}}$

Ans: D

$x^2 + y^2 = a^2 \cos^6\theta \cdot \sin^4\theta + a^2 \sin^6\theta \cdot \cos^4\theta$

$= a^2 \cos^4\theta \sin^4\theta (\cos^6\theta + \sin^2\theta)$

$= a^4 \cos^4\theta \sin^4\theta$

$xy = (a\cos^3\theta \cdot \sin^2\theta)(a\sin^3\theta \cdot \cos^2\theta)$

$= a^2 \cos^5\theta \cdot \sin^5\theta$

$\frac{(x^2+y^2)^p}{(xy)^q} = \frac{(a^4 \cos^4\theta \cdot \sin^4\theta)^p}{(a^2 \cos^5\theta \cdot \sin^5\theta)^q}$

$= a^{4p-2q} \cdot \cos^{4p-5q}\theta \cdot \sin^{4p-5q}\theta$

This is independent of θ

$\Rightarrow 4p - 5q = 0$

$\Rightarrow 4p = 5q$

Ans: A

06. **Short cut method**

$x = \cot\theta + \tan\theta$, $y = \sec\theta - \operatorname{cosec}\theta$

Let $\theta = 45^\circ$ | $y = \sqrt{2} - \frac{1}{\sqrt{2}}$

$\Rightarrow x = 1 + 1$ | $y = \frac{1}{\sqrt{2}}$

$\Rightarrow x = 2$

Now, $(x^2y)^{\frac{2}{3}} - (xy^2)^{\frac{2}{3}}$

$= \left(4 \cdot \frac{1}{\sqrt{2}}\right)^{\frac{2}{3}} - \left(2 \cdot \frac{1}{2}\right)^{\frac{2}{3}} = 2 - 1 = 1$

NOTE: A, C Both options

Ans. A, C

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07 Let $\alpha = 45^\circ$

$x = a(\sqrt{2}+1)$ | $y = \frac{b\left(1 - \frac{1}{\sqrt{2}}\right)}{\left(\frac{1}{\sqrt{2}}\right)} = b(\sqrt{2}-1)$

Now $xy = ab(\sqrt{2}+1)(\sqrt{2}-1)$

$= ab$

Ans. C

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08 $a\sec\theta + b\tan\theta + c = 0 \longrightarrow (1)$

$p\sec\theta + q\tan\theta + r = 0 \longrightarrow (2)$

$(1) \times q \Rightarrow aq\sec\theta + bq\tan\theta + cq = 0$

$(2) \times b \Rightarrow bp\sec\theta + bq\tan\theta + br = 0$

$\Rightarrow (aq - bp)\sec\theta + (cq - br) = 0$

$\Rightarrow \sec\theta = \frac{br - cq}{ap - bp}$

Similarly $\tan\theta = \frac{pc - ar}{aq - bp}$

Now, $\sec^2\theta - \tan^2\theta = 1$

$\Rightarrow \left(\frac{br-cq}{aq-bp}\right)^2 - \left(\frac{pc-ar}{aq-bp}\right)^2 = 1$

$\Rightarrow (br-cq)^2 - (pc-ar)^2 = (aq-bp)^2$

Ans: C

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09 $\frac{x^2}{a^2} + \frac{y^2}{b^2} - \frac{z^2}{c^2} = \sec^2\theta \cdot \cos^2\phi + \sec^2\theta \cdot \sin^2\phi - \tan^2\theta$

$= \sec^2\theta (\cos^2\phi + \sin^2\phi) - \tan^2\theta$

$= \sec^2\theta - \tan^2\theta$

$= 1$

Ans: A

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10 $\left(\frac{x}{a}\right)^2 - \left(\frac{y}{b}\right)^2 = 1$

$x = a\sin\theta$

Ans: B

JEE ADVANCED LEVEL

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01 Short trick method

put $A = 0^\circ$

$\therefore \boxed{p = 1}$, $\boxed{q = 1}$

option: C: $p^3 - 3p + 2q = 1 - 3 + 2 = 0$

Ans: C

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02 $\sec\theta + \tan\theta = x \rightarrow (1)$

$\sec\theta - \tan\theta = \frac{1}{x} \rightarrow (2)$

$(1) + (2) \Rightarrow 2\sec\theta = x + \frac{1}{x}$

$\Rightarrow \sec\theta = \frac{1}{2}\left(x + \frac{1}{x}\right)$

$(1) - (2) \Rightarrow$

$\tan\theta = \frac{1}{2}\left(x - \frac{1}{x}\right)$

Ans: A, C

03 Let $\theta = 45^\circ$

$$\left(\sqrt{2}-\frac{1}{\sqrt{2}}\right)\left(\sqrt{2}-\frac{1}{\sqrt{2}}\right)(1+1) = 1$$

Ans: B

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04 Statement I: $\sin\theta+\cos\theta = x \Rightarrow \sin\theta\cos\theta = \frac{x^2-1}{2}$

$$(\sin^2\theta)^3+(\cos^2\theta)^3 = (\sin^2\theta+\cos^2\theta)^2 - 3\sin^2\theta\cos^2\theta(\sin^2\theta+\cos^2\theta)$$

$$= 1-3\left(\frac{x^2-1}{2}\right)^2(1)$$

$$= \frac{4-3(x^2-1)^2}{4} \quad \text{(True)}$$

Statement II: Conceptual (True)

Ans. A

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05 Statement I: $x = a\sec\theta + b\tan\theta \rightarrow (1)$

$y = a\tan\theta + b\sec\theta \rightarrow (2)$

$(1)^2-(2)^2 \Rightarrow x^2-y^2 = a^2-b^2$ (True)

Statement II: $\sec\theta+\tan\theta = a$

$\Rightarrow \sec\theta-\tan\theta = \frac{1}{a}$

$\Rightarrow \tan\theta-\sec\theta = \frac{-1}{a}$ (True)

Ans. A

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06 Assertion: $\sec\theta+\tan\theta = x \rightarrow (1)$

$\Rightarrow \sec\theta-\tan\theta = \frac{1}{x} \rightarrow (2)$

$(1)+(2) \Rightarrow 2\sec\theta = x+\frac{1}{x} = \frac{x^2+1}{x}$

$\Rightarrow \sec\theta = \frac{x^2+1}{2x}$ (True)

Reason: Conceptual (True)

Ans. A

07. Assertion: Conceptual (false)

Reason: $\sec^2\theta - \tan^2\theta = 1$ $\forall\ \theta \in R - \left((2n+1)\frac{\pi}{2}\right)$ (~~False~~ True)

Ans. ~~B~~ D

08 $\cos A + \cos^2 A = 1$

$\Rightarrow \cos A = 1 - \cos^2 A$

$\Rightarrow \cos A = \sin^2 A$

$\Rightarrow \cos^2 A = \sin^4 A$

$\sin^2 A + \sin^4 A$

$= \sin^2 A + \cos^2 A$

$= 1$

Ans: B

~~Ans: B~~

09. ~~put $\theta = 0$~~

~~10~~

~~put $\theta =$~~

09. $\sin^4 A - 2\sin^2 A - \sin^8 A$

$= \cos^2 A - 2\cos A - \cos^4 A$

$= y^2 - 2y - y^4$

$= y^2 - 2y - (1-y)^2$

$= y^2 - 2y - 1 + 2y - y^2$

$= -1$

~~Let~~

Let $y = \cos A$

$\cos A + \cos^2 A = 1$

$y + y^2 - 1 = 0$

$\Rightarrow y^2 = 1 - y$

$\Rightarrow y^4 = (1-y)^2$

Ans. C

10.

10. Given $\cos x + \cos^2 x = 1$

$\Rightarrow \cos^2 x = 1 - \cos x$

Now, $\cos^3 x = \cos x \cdot \cos^2 x$

$= \cos x (1 - \cos x)$

$= \cos x - \cos^2 x$

$= \cos x - (1 - \cos x)$

$= 2\cos x - 1$

$\cos^6 x = (\cos^3 x)^2$

$= (2\cos x - 1)^2$

$= 4\cos^2 x - 4\cos x + 1$

$= 4(1 - \cos x) - 4\cos x + 1$

$= 5 - 8\cos x$

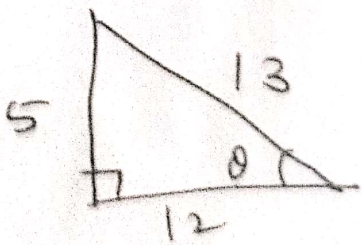
Now, $\cos^6 x + 4\cos^3 x$

$= (5 - 8\cos x) + 4(2\cos x - 1)$

$= 5 - 4 = 1$

Ans: B

11. Given $\tan\theta = \frac{5}{12}$



$\sin\theta = \frac{5}{13}$

$\Rightarrow \sin^2\theta = \frac{25}{169}$

Ans. A

12. $\sec\theta = \frac{13}{12} \Rightarrow \sec^2\theta = \frac{169}{144}$

Ans - B

13. $2\sec\theta = x + \frac{1}{x}$; $2\tan\theta = x - \frac{1}{x}$

$4(\sec^2\theta - \tan^2\theta) = \left(x + \frac{1}{x}\right)^2 - \left(x - \frac{1}{x}\right)^2$

$\left(x + \frac{1}{x}\right)^2 - \left(x - \frac{1}{x}\right)^2 = \frac{1}{4} = 0.25$

Integral value = 0

Ans. 0

14. NOTE: Please, discard this question as it has insufficient data

15. a) let $\theta = 45^\circ$

$1 + 1 = m$ | $\sqrt{2} - \frac{1}{\sqrt{2}} = n$

$\Rightarrow \boxed{m = 2}$ | $\Rightarrow \boxed{n = \frac{1}{\sqrt{2}}}$

Now, $(m^2 n)^{2/3} - (m n^2)^{2/3}$

$= \left(4 \cdot \frac{1}{\sqrt{2}}\right)^{2/3} - \left(2 \cdot \frac{1}{2}\right)^{2/3}$

$= (2\sqrt{2})^{2/3} - 1^{2/3}$

$= \left(2^{\frac{3}{2}}\right)^{2/3} - 1 = 2 - 1 = 1$ (r)

b) let $\theta = 45^\circ$

$m = \sqrt{2} - \frac{1}{\sqrt{2}}$ | $n = \sqrt{2} - \frac{1}{\sqrt{2}}$

$m = \frac{1}{\sqrt{2}}$ | $n = \frac{1}{\sqrt{2}}$

$$(m^2n)^{\frac{2}{3}} - (mn^2)^{\frac{2}{3}}$$

$$= \left(\frac{1}{2}\cdot\frac{1}{\sqrt{2}}\right)^{\frac{2}{3}} - \left(\frac{1}{\sqrt{2}}\cdot\frac{1}{2}\right)^{\frac{2}{3}} = 0 \quad (q)$$

c) Let $\alpha = 0°$

$x = a \Rightarrow (x-a) = 0$

Now $(x-a)(y-a) + (x-y)^2 \sin^2\alpha \cdot \cos^2\alpha$

$= (0)(y-a) + (x-y)^2 \cdot \sin^2 0° \cdot \cos^2 0°$

$= 0 \quad (q)$

d) Let $\alpha = \beta = \gamma = 0°$

$\Rightarrow x = r, \; y = 0, \; z = 0, \; r = 0$

Now, $x^2 + y^2 + z^2 + r^2 = r^2 \quad (s)$

Ans : r, q, q, s

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16 a) $(\tan\theta + \cot\theta)^2 = \tan^2\theta + \cot^2\theta + 2\tan\theta\cdot\cot\theta$

$= \tan^2\theta + \cot^2\theta + 2 \quad (p)$

b) $\tan^2\theta + \cot^2\theta = (\tan\theta + \cot\theta)^2 - 2\tan\theta\cot\theta$

$= (\tan\theta + \cot\theta)^2 - 2(\quad)$

c) Conceptual (r)

d) Conceptual (s)

Ans. p, –, r, s

LEARNERS TASK (CUQ's)

01. ~~$ay = m\sec\theta \cdot n\tan\theta$~~

$\frac{x}{m} = \sec\theta, \quad \frac{y}{n} = \tan\theta$

$\Rightarrow \frac{x^2}{m^2} - \frac{y^2}{n^2} = 1$

~~Ans: B~~

02 $ay = 1$

~~Ans: B~~

03 $\frac{a}{x} = \operatorname{cosec}\theta ; \quad \frac{b}{y} = \cot\theta$

$\Rightarrow \left(\frac{a}{x}\right)^2 - \left(\frac{b}{y}\right)^2 = 1$

~~Ans: B~~

04 $ay = ab \Rightarrow x^2y^2 = a^2b^2$

~~Ans: D~~

05 $ay = ab$

~~Ans: C~~

06 **Short cut method**

Let $\theta = 45^\circ$

$x = 1 + \frac{1}{\sqrt{2}}$

$y = 1 - \frac{1}{\sqrt{2}}$

$x + y = 2$

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

Now $(x^2 - y^2)^2 = [(x+y)(x-y)]^2$

$= [2 \cdot \sqrt{2}]^2 = 8$

option: B: $16xy = 16\left(1 + \frac{1}{\sqrt{2}}\right)\left(1 - \frac{1}{\sqrt{2}}\right)$

$= 16\left(1 - \frac{1}{2}\right) = 16 \times \frac{1}{2} = 8$

Ans. B

07. $\frac{x}{a} = \sin\theta$ | $y = b\tan\theta$

$\Rightarrow \frac{a}{x} = \operatorname{cosec}\theta$ | $\Rightarrow \frac{b}{y} = \cot\theta$

$\Rightarrow \frac{a^2}{x^2} - \frac{b^2}{y^2} = 1$

Ans: A

08 $x^2 - y^2 = 4$

Ans. D

09 $2(\sin^2\theta + \cos^2\theta) = 2(1) = 2$

Ans. A

10 $x = at, \quad y = \frac{a}{t}$

$\Rightarrow xy = a^2$

Ans. B

$\frac{x}{a} = \tan\theta, \quad \frac{y}{b} = \sec\theta$

$\Rightarrow \left(\frac{y}{b}\right)^2 - \left(\frac{x}{a}\right)^2 = 1$ (or) $\left(\frac{x}{a}\right)^2 - \left(\frac{y}{b}\right)^2 = -1$

Ans: A

$xy = pq(\cot^2\theta - \operatorname{cosec}^2\theta)$

$\Rightarrow xy = -pq$

$\Rightarrow \frac{x}{p} = -\frac{q}{y}$

Ans: B

$p^2 + q^2 = (\cos\theta + \sin\theta)^2 + (\sin\theta - \cos\theta)^2$

$= 2$

$\Rightarrow p^2 - 2 = -q^2$

Ans: B

$p\cos\theta + q\sin\theta = x \longrightarrow (1)$

$p\sin\theta - q\cos\theta = y \longrightarrow (2)$

$(1)^2 + (2)^2 \Rightarrow p^2 + q^2 = x^2 + y^2$

$\Rightarrow x^2 - p^2 = q^2 - y^2$

Ans: C

$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$

Ans: B

~~$x^2 + y^2 + z^2 = r^2$~~

Ans:

Let $\theta = \phi = 0^\circ$

$\therefore x = r; \quad y = 0, \quad z = 0$

$\therefore x^2 + y^2 + z^2 = r^2$

Ans: C

07. $\frac{x}{a} = \sin^4\theta$; $\frac{y}{b} = \cos^4\theta$

$\Rightarrow \sqrt{\frac{x}{a}} + \sqrt{\frac{y}{b}} = 1$

Ans: C

08 Let $\theta = 0^\circ$

$x = a$

$y = b$

$a^2 - b^2 = x^2 - y^2$

Ans: B

09 Let $\phi = \theta = 0^\circ$

$a = 1$

$b = 0$

$c = 0$

$a^2 + b^2 + c^2 = 1$

Ans: D

10 Let $\theta = 45^\circ$

$x = a\left(\frac{1}{\sqrt{2}}\right)^2 \cdot \left(\frac{1}{\sqrt{2}}\right)$

$x = \frac{a}{2\sqrt{2}}$

$y = \frac{a}{2\sqrt{2}}$

$x^2 + y^2 = \frac{a^2}{8} + \frac{a^2}{8} = \frac{a^2}{4}$

$x^2 y^2 = \frac{a^4}{64}$

$\frac{(x^2+y)^3}{x^2 y^2} = \frac{a^6}{64} \times \frac{64}{a^4}$

$= a^2$

Ans: C

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01. $x^2 - y^2 = a$

$\Rightarrow (x+y)(x-y) - a = 0$

~~$\Rightarrow x^2 y^2 = a$~~

Ans: B, C

$\Rightarrow$

02 Let $\theta = 45^\circ$

$= (1 + 1 + \sqrt{2})(1 + 1 - \sqrt{2})$

$= (2+\sqrt{2})(2-\sqrt{2}) = 4 - 2 = 2$

Ans: C

03 Statement I: Let $\theta = \phi = 0$

$l = p, \quad m = 0, \quad n = 0.$

$\therefore \frac{l^2}{p^2} + \frac{m^2}{q^2} + \frac{n^2}{r^2} = 1$ (True)

Statement II: $\frac{\sin\theta}{1-\cos\theta} = \frac{1+\cos\theta}{\sin\theta}$

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

$(\tan\theta + \sec\theta)(\tan\theta - \sec\theta) = 1$

$\Rightarrow \tan^2\theta - \sec^2\theta = 1$

$\Rightarrow -1 = 1$ (False)

Ans:

04 Statement I:

Let $\theta = 45^\circ$

$l = \sqrt{2} - \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}}$

$m = \sqrt{2} - \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}}$

Now, $l^2 m^2 (l^2 + m^2 + 3)$

$= \frac{1}{2} \cdot \frac{1}{2} \left(\frac{1}{2} + \frac{1}{2} + 3\right)$

$= \frac{1}{4}(4)$

$= 1$ (True)

Statement II:

$\frac{\cos\theta}{1-\sin\theta} = \frac{1+\sin\theta}{\cos\theta}$

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

$\frac{\sin\theta}{1+\sin\theta} = \frac{\cos\theta}{1+\cos\theta}$

(False)

Ans. C

05 **Assertion:** $\sin\theta \cdot \cos\theta = \frac{1}{2}$

$\theta = 45^\circ$ satisfies the above eqn.

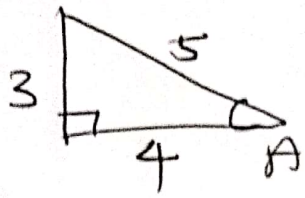
$\therefore \sin 2\theta = \sin 2\times 45^\circ = \sin 90^\circ = 1$ (True)

Reason: Conceptual (True)

Ans: A

06 **Assertion:** $\sin A = \frac{3}{5}$

$\therefore \tan A = \frac{3}{4}$ (True)



Reason: $\sin A = \frac{3}{5}$

$\Rightarrow \cos A = \frac{4}{5}$ and $\tan A = \frac{3}{4}$ (True)

Ans: A

07 $\frac{x}{a}\cos\theta + \frac{y}{b}\sin\theta = 1 \longrightarrow (1)$

$\frac{x}{a}\sin\theta - \frac{y}{b}\cos\theta = 1 \longrightarrow (2)$

$(1)^2 + (2)^2 \Rightarrow \frac{x^2}{a^2} + \frac{y^2}{b^2} = 2$

$\Rightarrow a^2y^2 + b^2x^2 = 2a^2b^2$

Ans: D

08 $a^2y^2 + b^2x^2 = 2a^2b^2$

$a = 2, b = 2$

$4y^2 + 4x^2 = 2 \cdot 4 \cdot 4$

$\Rightarrow x^2 + y^2 = 8$

Ans: C

09 $\frac{x}{a}\cos\theta + \frac{y}{b}\sin\theta = 1$

$\theta = 45^\circ, \; a = 2, b = 2$

$\frac{x}{2}\cdot\frac{1}{\sqrt{2}} + \frac{y}{2}\cdot\frac{1}{\sqrt{2}} = 1$

$x + y = 2\sqrt{2}$

Ans: A

10. $\cos\theta = \frac{4}{5} \Rightarrow \sec\theta = \frac{5}{4}$

Ans: B

11. $\tan^2\theta + 1 = \left(\frac{3}{4}\right)^2 + 1 = \frac{25}{16}$

Ans. A

12. $\frac{U}{l} = \tan\theta, \quad \frac{V}{m} = \sin\theta$

$\Rightarrow \frac{l}{U} = \cot\theta, \quad \frac{m}{V} = \operatorname{cosec}\theta$

$\Rightarrow \frac{m^2}{V^2} - \frac{l^2}{U^2} = 1$

Ans. 1

13. put $\theta = \phi = 0^\circ$

$\therefore x = r, \quad y = 0, \quad z = 0$

$\therefore x^2 + y^2 + z^2 = r^2$

NOTE: Please discard this problem, as it has insufficient data

14. a) $y^2 = 4ax$

$(2at)^2 = 4a(at^2)$

$\Rightarrow 4a^2t^2 = 4a^2t^2 \quad (r)$

b) $xy = (at)\left(\frac{a}{t}\right) = a^2 \quad (q)$

c) $\frac{x}{a} = \sec\theta, \quad \frac{y}{a} = \tan\theta$

$\left(\frac{x}{a}\right)^2 - \left(\frac{y}{a}\right)^2 = 1 \Rightarrow x^2 - y^2 = a^2 \quad (p)$

d) $\left(\frac{x}{a}\right)^2 + \left(\frac{y}{b}\right)^2 = 1 \quad (s)$

Ans: r, q, p, s

15 (a) option verification

(r) $\frac{x-h}{r} = \sin\theta$, $\frac{y-k}{r} = \cos\theta$

$\Rightarrow \left(\frac{x-h}{r}\right)^2 + \left(\frac{y-k}{r}\right)^2 = 1$

b)(r) $\frac{x+h}{r} = \cos\theta$, $\frac{y+k}{r} = \sin\theta$

$\Rightarrow \left(\frac{x+h}{r}\right)^2 + \left(\frac{y+k}{r}\right)^2 = 1$

c)(q) $\frac{x-k}{r} = \cos\theta$; $\frac{y-h}{r} = \sin\theta$

$\left(\frac{x-k}{r}\right)^2 + \left(\frac{y-h}{r}\right)^2 = 1$

d) (p) $\frac{x+k}{r} = \sin\theta$, $\frac{y+h}{r} = \cos\theta$

$\left(\frac{x+k}{r}\right)^2 + \left(\frac{y+h}{r}\right)^2 = 1$ Ans. t, r, q, p

ADDITIONAL PRACTICE QUESTIONS

01. $xy = a^2b^2(\sec\theta - \tan\theta)^2$

$\Rightarrow xy = a^2b^2$ Ans: A

02 $x = 1(2+\sqrt{3})^2 = 7+4\sqrt{3} \Rightarrow x^2 = 97+56\sqrt{3}$

$y = 1(2-\sqrt{3})^2 = 7-4\sqrt{3} \Rightarrow y^2 = 97-56\sqrt{3}$

$\therefore x^2+y^2 = 194$ Ans: c

03

$$x = \frac{1}{4}(\sqrt{2}+1)^2 = \frac{1}{4}(3+2\sqrt{2})$$

(1)

$$y = \frac{1}{4}(\sqrt{2}-1)^2 = \frac{1}{4}(3-2\sqrt{2})$$

$$x^2 - y^2 = \frac{1}{16}\left[(3+2\sqrt{2})^2 - (3-2\sqrt{2})^2\right]$$

$$= \frac{1}{16}\left[4 \cdot 3 \cdot 2\sqrt{2}\right] = \frac{3\sqrt{2}}{2}$$

Ans: C

$\Rightarrow$ THE END $\Leftarrow$