Questions asked in bank exams

Usually questions on comparison between the roots of two equations are asked in competitive exams, being fast at them guarantees some marks in the exam.

Type1: $ax^2-bx+c = 0$

&

$dy^2+ey+c = 0$

In this type the variable of equation with a negative sign [-] in middle will always be the greater (here, x > y) will always be the answer.

Ex: $x^2-7x+12 = 0$ & $y^2+5y+6 = 0$

Roots of x will be 3, 4

Roots of y will be -3, -2

Since $3 > -3$ & -2 also $4 > -3, -2$

So $x > y$

Type2: $kx^2+ax-b = 0$

&

$dy^2 – cx-e = 0$

The answer in these types is always [No relation]

Ex: $x^2+x-6 = 0$ & $y^2-2y-15 = 0$

Roots of $x = -3, 2$

Roots of $y = 5, -3$

Since $-3 < 5$; $-3 = -3$

&

$2 < 5$; $2 > -3$

So, no relation exists between x and y

Rest questions have to be solved to establish a relation.

$ax^2-bx+c = 0$ & $dy^2+ey+c = 0$ type of questions

- $3x^2–17x+10=0$ & $y^2+13y+42=0$
- $x^2-8x+15=0$ & $y^2+7y+12=0$
- $9x^2+46x+5=0$ & $y^2-6y+9=0$
- $6x^2+61x+63=0$ & $39y^2-70y+24=0$
- $3x^2+31x+36=0$ & $y^2-15y+56=0$

Find relation between x and y and find their roots also.

$kx^2+ax-b = 0$ & $dy^2 – cx-e = 0$ type questions

- $10x^2+27x-28=0$ & $12y^2-17y-5=0$
- $15x^2+x-6=0$ & $12y^2-7y-12=0$
- $3x^2-17x+10=0$ & $13x^2-64x-5=0$
- $18x^2+9x-20=0$ & $3x^2-23x-36=0$
- $15x^2-17x+4=0$ & $y^2-3y-54=0$

Find relation between x and y and also find their roots.

Mixed type

In these questions the roots have to be found to reach a conclusion.

Comparison would usually be like

- $x > y$
- $x < y$
- $x \geq y$
- $x \leq y$
- $x = y$ or No relation

Questions

- $12x^2-41x+35=0$ & $63y^2-38y-5=0$
- $12x^2+32x+5=0$ & $20y^2+37y+15=0$
- $56x^2+11x-12=0$ & $21y^2-26y+8=0$
- $14x^2-34x+12=0$ & $5y^2-14y+8=0$
- $154x^2+169x+45=0$ & $33y^2+103y+40=0$
- $266x^2-53x-15=0$ & $266y^2+137y+15=0$
- $48x^2+79x+20=0$ & $68y^2+121y+45=0$
- $x^2-9x+18=0$ & $y^2-12y+32=0$

- $20x^2-19x-28=0$ & $3y^2-16y+21=0$
- $8x^2-49x+45=0$ & $8y^2-5y-22=0$
- $21x^2-43x+20=0$ & $6y^2-28y+16=0$
- $18x^2+39x+18=0$ & $45y^2+41y+4=0$
- $51x^2-122x+7=0$ & $56y^2-31y+3=0$
- $56x^2-31x+3=0$ & $45y^2-52y+15=0$
- $6x^2+7x-3=0$ & $35x^2-43x-36=0$

Answers

- $x > y$
- No relation
- $y > x$
- No relation
- No relation $x \geq y$
- No relation
- No relation $x < y$
- No relation
- No relation

- No relation
- No relation y < x
- No relation

Tricky ones

- $0.4x^2+2.6x+4=0$ & $0.4y^2+3.8y+8.4=0$

(multiply both the equations with 10)

- $x^2 - 8\sqrt{3}x + 45 = 0$ & $y^2 - 11\sqrt{3}y + 72 = 0$

(take factors of 45 and 72; leaving the number in roots try forming pairs which on addition or subtraction gives required number)

- $5x^2 - \left(10 + \sqrt{13}\right)x + 2\sqrt{13} = 0$

&

$$8y^2 - \left(10 + 4\sqrt{13}\right)y + 5\sqrt{13} = 0$$

(Solve it normally can be done)