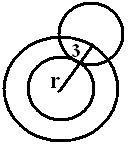
Solutions :

1. Ans : (c)

distance between (1,2) and (4,6)

1. Ans : (c)

Centre of given circle

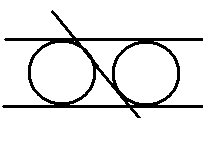
Required locus is the circle with centre and

Required circle is

1. Ans : (b)

1. Ans : (d)

Centres



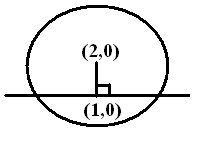
1. Ans : (b)

As two of the 3 lines are parallel the number of possible circles is 2

1. Ans : (b)

As the coordinate axes are tangents and their combined equation is

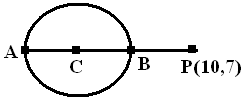
1. Ans : (d)

Centre , mid point

Line joining them is

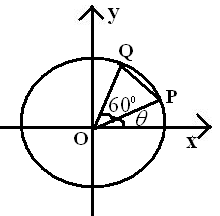
The chord is perpendicular to any horizontal line

1. Ans : (d)

Centre

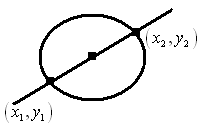
Least distance

Greatest distance

1. Ans : (a)

Let 

is equilateral



1. Ans : (c)

Let

Equation of the circle is

1. Ans : (b)

Any tangent is of the form

Where

1. Ans : (d)

Consider the latus rectum in particular : S is the focus

1. Ans : (a)

Vertex is (2,1) focus is

1. Ans : (d)

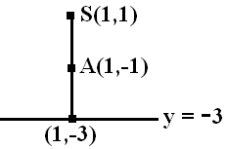
Here is a tangent (1,3) lies on it

1. Ans : (c)

Area of

Area

directrix :



1. Ans : (a)

Vertex is mid point between focus and directrix

1. Ans : (c)

The two parabolas intersect at (0,0) and (4a,4a) and the length of the common chord is the distance between them.

Required

1. Ans : (b)

Focal distance of

Here

Points are

1. Ans : (a)

Directrix is

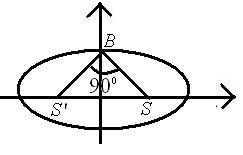
i.e

1. Ans : (d)

Here

1. Ans : (c)

on squaring and arranging

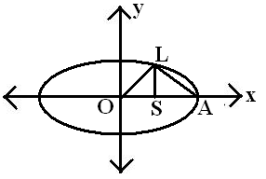
1. Ans : (b)

In triangle OBS,

1. Ans : (d)

1. Ans : (c)

Mid point of LR is (3,5) which is the other focus. Distance between the foci

1. Ans : (c)

Triangles OLS & LSA are equal in area

1. Ans : (c)

and

required sum

1. Ans : (d)

Let p be any point on the ellipse. Then

Required

Here

Required

1. Ans : (b)

w.k.t focus (ae,0) lies on

1. Ans : (b)

Required

1. Ans : (b)

Area of the triangle is maximum if P coincides with B

Then area of the

1. Ans : (b)

Distance between foci

1. Ans : (c)

Here

Dividing,

1. Ans : (c)

1. Ans : (c)

Vertex is mid point of focus and center

Hence

1. Ans : (c)

1. Ans : (a)

and

hyperbola is rectangular

1. Ans : (a)

1. Ans : (a)

It is a hyperbola with as the foci and length of the transverse axis = 4

1. Ans : (c)

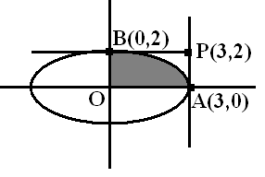
1. Ans : (d)

We have lies on the hyperbola

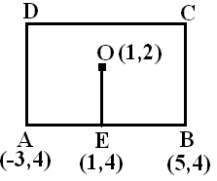
1. Ans : (a)

Slope of L.R , Axis passes through S(3,3) and slope of axis = 1

1. Ans : (c)

1. Ans : (a)

is a rectangle, area

1. Ans : (a)

E = midpoint of AB = (1,4)

BC = 2(OE) = 4

AB = 8

Area

1. Ans : (c)

Verify only lies on

1. Ans : (a)

1. Ans : (a)

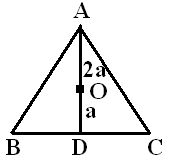
Centre

1. Ans : (a)

Only circle with centre is in option (a)

1. Ans : (c)

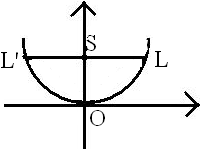
must hold good

1. Ans : (c)

Centre = Centroid

1. Ans : (b)

Equation of OP is , Equation of OQ is

1. Ans : (c)

1. Ans : (a)

Directrix

we have directrix is

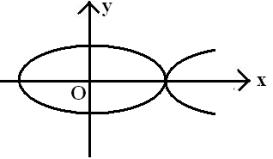
1. Ans : (a)

be any point on the ellipse

Squaring and arranging we get

1. Ans :(c)

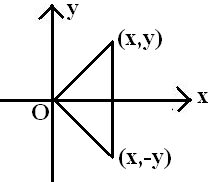
, hyperbola is , passes through



1. Ans : (b)

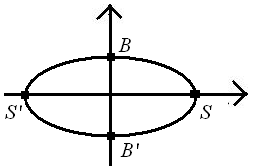
Vertex (k,0) must coincide with (a,0) i.e., (5,0)

1. Ans : (d)



Required

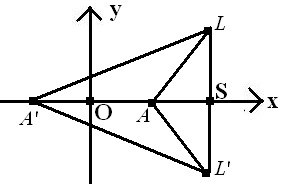
1. Ans : (b)



1. Ans : (b)

1. Ans : (c)

Area of bigger triangle



Area of smaller triangle

Their ratio

**Answer Key :**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1) c | 2) c | 3) b | 4) d | 5) b | 6) b | 7) d | 8) d | 9) a | 10) c |
| 11) b | 12) d | 13) a | 14) d | 15) c | 16) a | 17) c | 18) b | 19) a | 20) d |
| 21) c | 22) b | 23) d | 24) c | 25) c | 26) c | 27) d | 28) b | 29) b | 30) b |
| 31) b | 32) c | 33) c | 34) c | 35) c | 36) a | 37) a | 38) a | 39) c | 40) d |
| 41) a | 42) c | 43) a | 44) a | 45) c | 46) a | 47) a | 48) a | 49) c | 50) c |
| 51) b | 52) c | 53) a | 54) a | 55) c | 56) b | 57) d | 58) b | 59) b | 60) c |