1. (c) 

 OR t



.

1. (b) 



.

1. (b) The given expression can be written as



After solving, we get the required result *i.e.* .

1. (a) ⇒

 ⇒ 

Thus *A, B, C* will be in A.P.

1. (d) 







.

1. (a) We have  and 





Hence, 

1. (c) Given equation  and  The given equation may be written as  and Therefore

 …..(i)

 …..(ii)

Divide (i) by (ii), we get   ⇒ .

1. (a) We know that  (in )

Now, 









.

1. (c) Since .
2. (b) then





.

1. (c) ,





or 

or 

 

1. (b) 

⇒ 

⇒ 

⇒ 

⇒ .

1. (c) .
2. (b) On simplification, it reduces to 

 .

1. (c) 

 .

1. (b) 

  ⇒ 

 .

1. (c)  ⇒ 

   or 

 .

1. (a) 

 

 .

1. (a) 

 

, .

1. (a) It is obvious.
2. (b) .
3. (b) 

 .

1. (c) 

  , 

 .

1. (c) ⇒ 

⇒  (Impossible)

and ⇒ .

1. (a)  ⇒ 

But this value does not satisfy the given equation. Hence option (a) is the correct answer

1. (a) 

  or 

 ,  *i*.*e*., .

1. (d) No solution as  and both of them do not attain their maximum value for the same angle.

**Aliter :** Since the maximum value of  = .

Hence there is no  satisfying .

1. (d) 

 

*i.e.,*  

and 

Hence value of  between 0 and  are 

*i.e.*, .

1. (a) We have, 

Now check by options, put 

then 

⇒  ⇒ 30 = 30

Hence (a) is the correct answer.

1. (c) , 

Hence general value is .