1. (b) Angle 

⇒ Radius = 20 *cm.*

1. (c) Incorrect statement is , because value of  is always .
2. (a) 



1. (d) We have,







Required value of .

1. (a) 

Squaring on both sides, we get



.

1. (c) 

Therefore .

1. (b) 

.

1. (c) and 



1. Since is and is in third quadrant(c) We have therefore is in IV quadrant. So .

Now 

.

1. (d) 



 is in 2nd quadrant)

and . Thus,  .

1. (b)  is the sum of two positive quantities and hence the result must be positive. But for  we have the sum equal to  which is negative.

(  is negative for θ lying in 2nd quadrant). So the required positive value .

1. (d) 

.

1. (b) Given that 





1. (d) The expression can be written as





1. (c) Given that 

and 

Squaring and adding, we get







Hence, 

**Trick :** Here we can guess that the value of  is independent of *θ*, so put any suitable value of *θ i.e.*  so that  and  Hence  (Also check for other value of *θ*).

1. (c) 



**Trick :** Put  we get the value of expression equal to 1. Again put  the value remains 1, it means that the expression is independent of *θ* and is equal to 1.

1. (a) 

.

1. (b) Multiplying both sides by

,

we have, 



⇒ 

Similarly, .

1. (d) 

, 

1. (d) 

, 

1. (a) We know that one of the factor of the given expression is .

Therefore .

1. (a) 

Therefore  

.

1. (b) Since 

etc.

1. (c) 







.

1. (a) 



.

1. (c) 

.

1. (d) 

.

1. (b) 

Subtracting second from first, we get 

.

1. (c) 

and 



.

1. (c) 

