**Trigonometry 2**

**1.** Solve for .

For , , where n is an integer.

Since ,

For , , where n is an integer.

Since , .

**2.** Show that for all values of θ ,

(a)

(b)

(c) .

(a)

(b)

, by (a), replace by

(c) Consider:

, and using (a)

Hence,

**3.**  Prove .

R.H.S. =

=

=

=

=

=

=

=

= L.H.S.

**4.** Given that . Use the substitution ,show that .

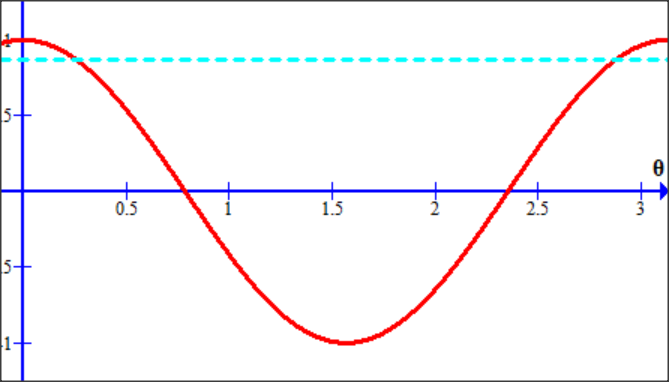
Hence, or otherwise, prove that .

Let ,

Since is real ,

**5.** Sketch a graph in the range . Hence, find the set of values of ,

where , satisfying the inequality .



For the equation,

We get and .

By drawing the horizontal line , we get the solution for

and hence is .

**6.** Solve for .

Put then

Use numerical method such as Newton’s method to solve for the real roots:

**7.** If , simplify . Use your result to find the sum of the first n terms of the series .

Sum of the first n terms of the series

=

**8.** Solve the equation .

By drawing right angled triangles, we have

Therefore

Squaring,

,

Solving, , using only the positive root.

**9.** Prove that .

Hence, find the value of , leaving your answer in surd form.

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