(a)Express e-½iθ-e½iθ in trigonometric form, and show that (1-eiθ)2 = -4eiθsin2 ½θ.

(b) For a positive integer *n*, series *C* and *S* are given by



where  is binomial coefficient. By considering the expansion of

(1-y)2n show that *C* = (–4)*n* cos *nθ*sin2n (½θ), and find a similar expression

for *S*.