

- 4 (a) Show that the equation

$$\frac{\tan x + \sin x}{\tan x - \sin x} = k,$$

where  $k$  is a constant, may be expressed as

$$\frac{1 + \cos x}{1 - \cos x} = k. \quad [2]$$

.....

.....

.....

.....

.....

.....

.....

- (b) Hence express  $\cos x$  in terms of  $k$ . [2]

.....

.....

.....

.....

.....

.....

- (c) Hence solve the equation  $\frac{\tan x + \sin x}{\tan x - \sin x} = 4$  for  $-\pi < x < \pi$ . [2]

.....

.....

.....

.....

.....

.....