MAT125, Paper Homework 5

1. For what values of $x$ between 0 and $2\pi$ is the function

$$f(x) = x - 2 \sin(x)$$

increasing?

2. How many lines which are tangent to the curve

$$y = \frac{x}{x + 1}$$

pass through the point $(1, 3)$? Where do they touch the curve?