

Name: \_\_\_\_\_

Student Number: \_\_\_\_\_

1. Calculate the following value.

a)  $f(x) = 5 - \sin x$

$$(f^{-1})'(5) =$$

b)  $f(x) = e^x + 2$

$$(f^{-1})'(3) =$$

2. Solve the following problem

A bacteria culture grows at a constant relative growth rate. The bacteria count was 400 after 2 hours and 25600 after 6 hours.

- a) What was the initial size of the culture?
- b) Find the rate of growth after 4.5 hours
- c) When will the population reach 50000?