1 (b) Starting with $x_0 = 1.5$

use the iteration formula $x_{n+1} = \sqrt[4]{x_n^2 + 5}$ three times to find an estimate for a solution of $x^4 - x^2 - 5 = 0$

$x_0 = 1.5$

$x_1 = \sqrt[4]{1.5^2 + 5}$

$= 1.6409\ldots$ (1)

$x_2 = \sqrt[4]{1.6409^2 + 5}$

$= 1.6654\ldots$ (1)

$x_3 = \sqrt[4]{1.6654^2 + 5}$

$= 1.669763088$ (1)

1.669763088

(3)

(Total for Question 1 is 3 marks)