5 $f(x) = 2ax^3 + x^2 - bx + 3a$ where a and b are integers.

Given that $(x + 2)$ and $(x - 1)$ are both factors of $f(x)$

(a) show that $a = 2$ and find the value of b

(5)

(b) Hence factorise $f(x)$ completely.

(2)

Hence, given that $h(y) = 2^{(3y + 2)} + 2^{2y} - 11(2^y) + 6$

(c) solve the equation $h(y) = 0$

Where appropriate give your answers to 3 decimal places.

(5)

P 7 1 8 1 8 A 0 1 0 2 8

Question 5 continued

(Total for Question 5 is 12 marks)