2. (a) Find the first 4 terms, in ascending powers of x, of the binomial expansion of

$$\sqrt{1+4x}$$

giving each coefficient in its simplest form.

(4)

The expansion can be used to find an approximation for $\sqrt{26}$

(b) Explain why $x = \frac{25}{4}$ **should not** be used in the expansion to find an approximation for $\sqrt{26}$

(1)

(c) Explain how you could use $x = \frac{1}{100}$ in the expansion to find an approximation for $\sqrt{26}$

There is no need to carry out the calculation.

(2)