

5.

In this question you must show all stages of your working.

Solutions relying on calculator technology are not acceptable.

(a) By letting $p = 2^x$, show that the equation

$$2 \times 4^x + 2^{x+3} = 1 + 2^{x-2}$$

can be rewritten in the form

$$8p^2 + 31p - 4 = 0$$

(3)

(b) Hence solve

$$2 \times 4^x + 2^{x+3} = 1 + 2^{x-2}$$

(3)