

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

$$(1 + kx)^{10}$$

where  $k$  is a non-zero constant. Write each coefficient as simply as possible.

(3)

Given that in the expansion of  $(1 + kx)^{10}$  the coefficient of  $x^3$  is 3 times the coefficient of  $x$ ,

(b) find the possible values of  $k$ .

(3)