3. **In this question you must show all stages of your working.**
Solutions relying on calculator technology are not acceptable.

Given that

$$\frac{x+k}{x-3} \geqslant \frac{3x}{x+4}$$

where k is a constant,

(a) show that

$$(x-3)(x+4)\left(2x^2-(k+A)x-4k\right) \leqslant 0$$

where A is a constant to be determined.

(3)

(b) Hence, or otherwise, determine the range of values of x for which

$$\frac{x+2}{x-3} \geqslant \frac{3x}{x+4}$$

(4)

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Question 3 continued

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Question 3 continued

(Total for Question 3 is 7 marks)