2 The point A has coordinates $(-7, -1)$ and the point B has coordinates $(3, 4)$

(a) Find an equation of the line that passes through A and B
Give your answer in the form $ax + by + c = 0$ where a, b and c are integers.

(3)

The point C has coordinates $(-3, 7)$

Given that k is a constant such that $AB = kAC$

(b) find the value of k

(2)

The point D has coordinates $(3, p)$ where p is a constant.

Given that CD is perpendicular to AB

(c) find the value of p

(3)

Question 2 continued

(Total for Question 2 is 8 marks)