

**26** The equation of a curve **C** is  $y = (kx^2 - 2)(x + 3)$ , where  $k$  is a constant.

The point **A** on **C** has  $x$  coordinate equal to  $-1$

The tangent to **C** at **A** has gradient equal to  $-8$

(a) Show that the  $x$  coordinates of the stationary points on **C** satisfy the equation

$$3x^2 + 6x - 1 = 0$$

(5)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

(b) Write  $3x^2 + 6x - 1$  in the form  $a(x + b)^2 + c$  where  $a$ ,  $b$  and  $c$  are integers.

.....  
(3)

(c) Hence find the exact  $x$  coordinate of each of the stationary points on **C**  
Show your working clearly.

.....  
(2)

(Total for Question 26 is 10 marks)

Turn over for Question 27

