	YORKSHIRE
V	MATHS TUTOR

1. Factorise completely	V MATHS TUTOR		
$x^3-4x^2+3x.$	(3)		
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	And the second of management of the		
	4		
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Q1

(Total 3 marks)

- 3. Find the set of values of x for which
  - (a) 4x-5 > 15-x

(2)

(b) x(x-4) > 12

(4)

$x^3 - 9x$ .	
x - 3x.	(3)
	-
	Q2

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3 Turn over

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(a) 4x - 3 > 7 - x

(2)

(b)  $2x^2 - 5x - 12 < 0$ 

(4)

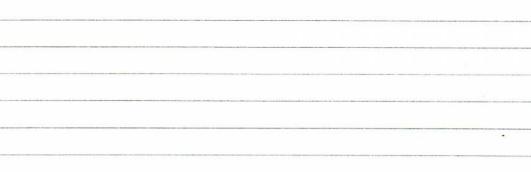
(c) **both**  $4x - 3 \ge 7 - x$  **and**  $2x^2 - 5x - 12 \le 0$ 

 	 	 _

(1)

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$x^2 - 7x - 18 > 0.$	
	(4)
,	
	-
	Q2



Turn over

- 9. Given that  $f(x) = (x^2 6x)(x 2) + 3x$ ,
  - (a) express f(x) in the form  $x(ax^2 + bx + c)$ , where a, b and c are constants.

(3)

(b) Hence factorise f(x) completely.

(2)

(c) Sketch the graph of y = f(x), showing the coordinates of each point at which the graph meets the axes.

(3)

3. Find the set of values of x for which										
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(a) 
$$3(x-2) < 8-2x$$

(2)

(b) 
$$(2x-7)(1+x) < 0$$

(3)

(c) both 
$$3(x-2) < 8-2x$$
 and  $(2x-7)(1+x) < 0$ 

(1


**(1)** 

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9.	Thee	equation
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$$(k+3)x^2 + 6x + k = 5$$
, where k is a constant,

has two distinct real solutions for x.

## (a) Show that k satisfies

$$k^2 - 2k - 24 < 0$$

(4)

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

(3)

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	Leave
2 1.1	blank
Find the set of values of x for which	

Find the set of values of x for which	
(a) $2(3x+4) > 1-x$	
	(2)
(b) $3x^2 + 8x - 3 < 0$	
	(4)
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