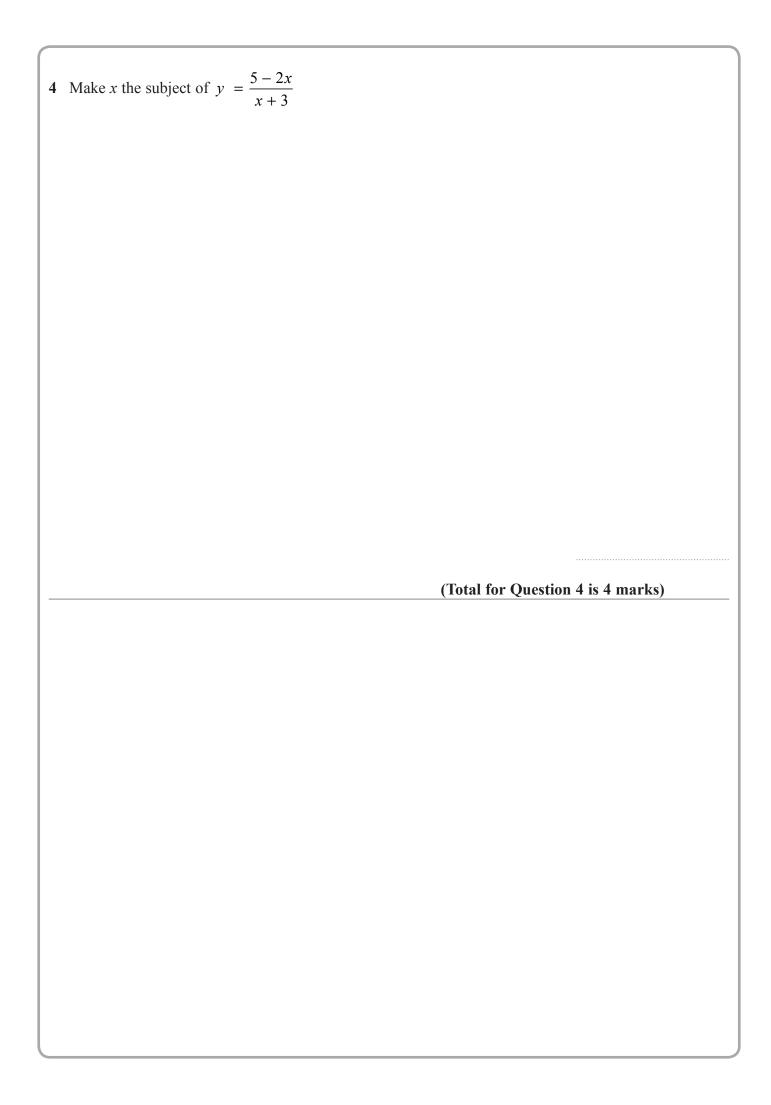
1 (a) Factorise $6y^2 - y - 5$	
(b) Make f the subject of $w = \frac{2f + 3}{8 - f}$	(2)
(c) Express $4x^2 - 8x + 7$ in the form $a(x + b)^2 + c$ where a, b and c are integrated as $a(x + b)^2 + c$	(3) gers.
	(3)
(Total for Questio	

2	Make x the subject of the formula $y = x$	$= \sqrt{\frac{3x-2}{x+1}}$		
_			(Total for Question 2 is 4 marks)	

3	
	Make x the subject of $y = \sqrt{\frac{x+1}{x-4}}$
	whate x the subject of $y - \sqrt{x-4}$
	(Total for Question 3 is 4 marks)



_		9a - 7	3a - 7	
5	(a) Solve		4	= 4.55

Show clear algebraic working.



(b) Make c the subject of the formula $p = \sqrt{\frac{ac + 8}{3 + c}}$

(4)

(Total for Question 5 is 7 marks)

6
$$a = \frac{14}{3x - 7}$$
 $x = \frac{7}{4y - 3}$
Express a in the form $\frac{py + q}{ry + s}$ where p , q , r and s are integers. Give your answer in its simplest form.

a =

(Total for Question 6 is 3 marks)

7	Given that $x = \frac{5}{9y + 5}$ and that $y = \frac{5}{5a - 2}$	
	find an expression for x in terms of a. Give your expression as a single fraction in its simplest form.	
	(Total for Question 7 is 4 marks)	

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O	16	L

Show that $\frac{3x+6}{x^2-3x-10} \div \frac{x+5}{x^3-25x}$ simplifies to ax where a is an integer.

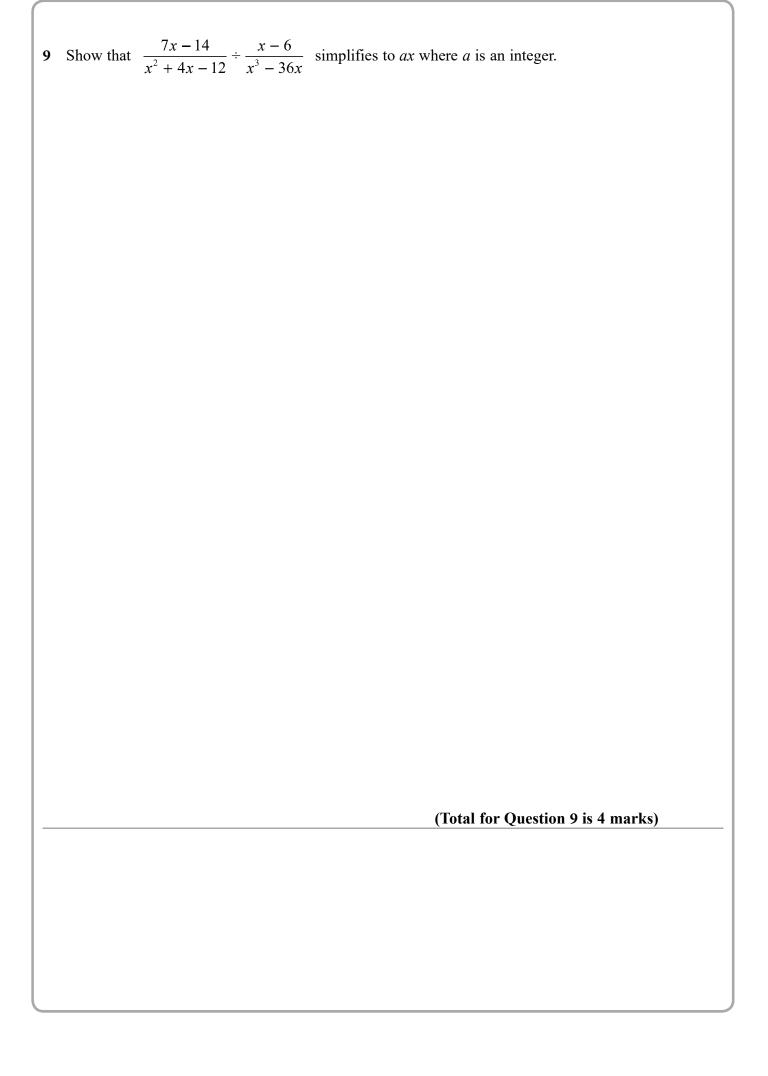
(3)

(b) Show that
$$\frac{1}{6x^2 + 7x - 5} \div \frac{1}{4x^2 - 1}$$

where a, b, c and d are integers.

(3)

(Total for Question 8 is 6 marks)





Simplify fully $\frac{6x^3 + 13x^2 - 5x}{4x^2 - 25}$

(3)

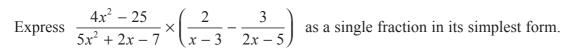
(b)

Show that $\frac{3x+6}{x^2-3x-10} \div \frac{x+5}{x^3-25x}$ simplifies to ax where a is an integer.

(4)

(Total for Question 10 is 7 marks)





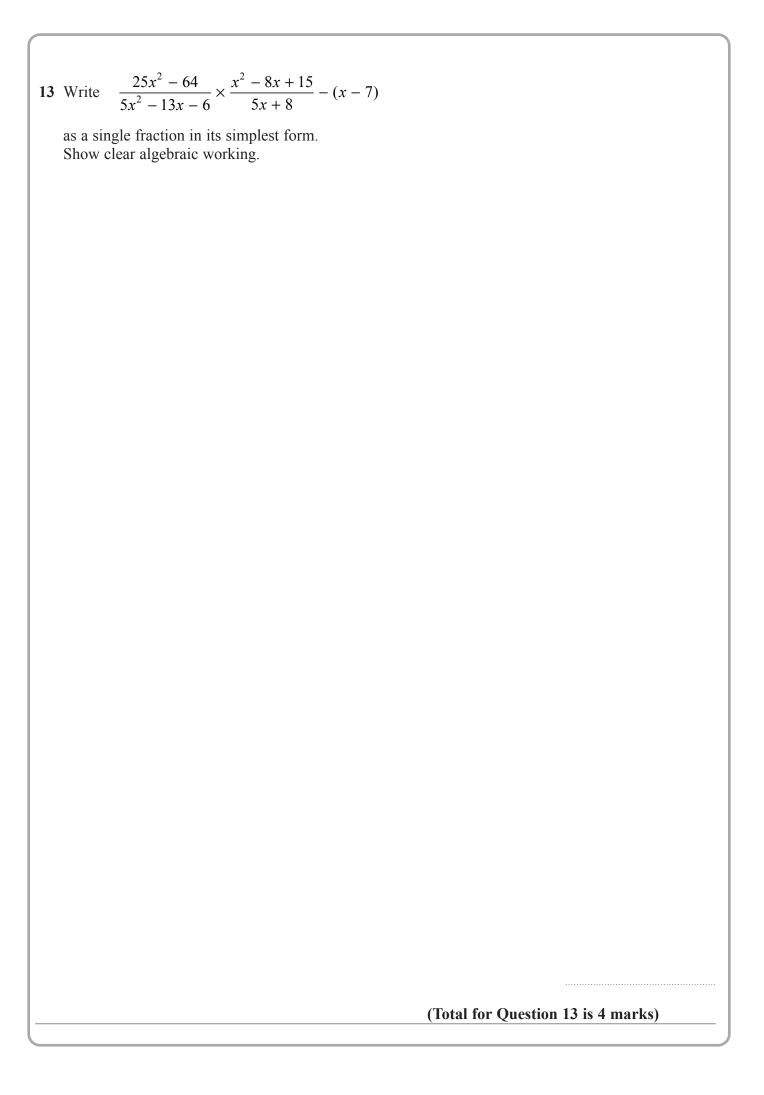
(Total for Question 10 is 4 marks)



$$\left(\frac{4}{2x-5} - \frac{3}{2x-3}\right) \div \frac{9x-4x^3}{6x^2-17x+5}$$

as a single fraction in its simplest form.

(Total for Question 12 is 4 marks)



1	4	V	Vτ	-i1	te
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$$\frac{4x^2 - 17x - 15}{2x - 1} \times \frac{2x^2 - 7x + 3}{x^2 - 25} + (29 - 4x)$$

as a single fraction in its simplest form.

(Total for Question 14 is 4 marks)

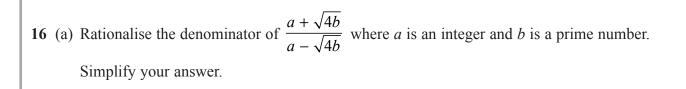
1	5
	7

(a) Simplify fully $\frac{10x^2 + 23x + 12}{4x^2 - 9}$

(3)

$$2^{2y} \times 2^{3y+2} = \frac{8^{5y}}{4^n}$$

(b) Find an expression for *n* in terms of *y*. Show clear algebraic working and simplify your expression.



(b) Given that
$$\left(\sqrt{\frac{y}{x}}\right)^{-5} = \frac{x^m}{y^m}$$
 where $x \neq y$

find the value of m.

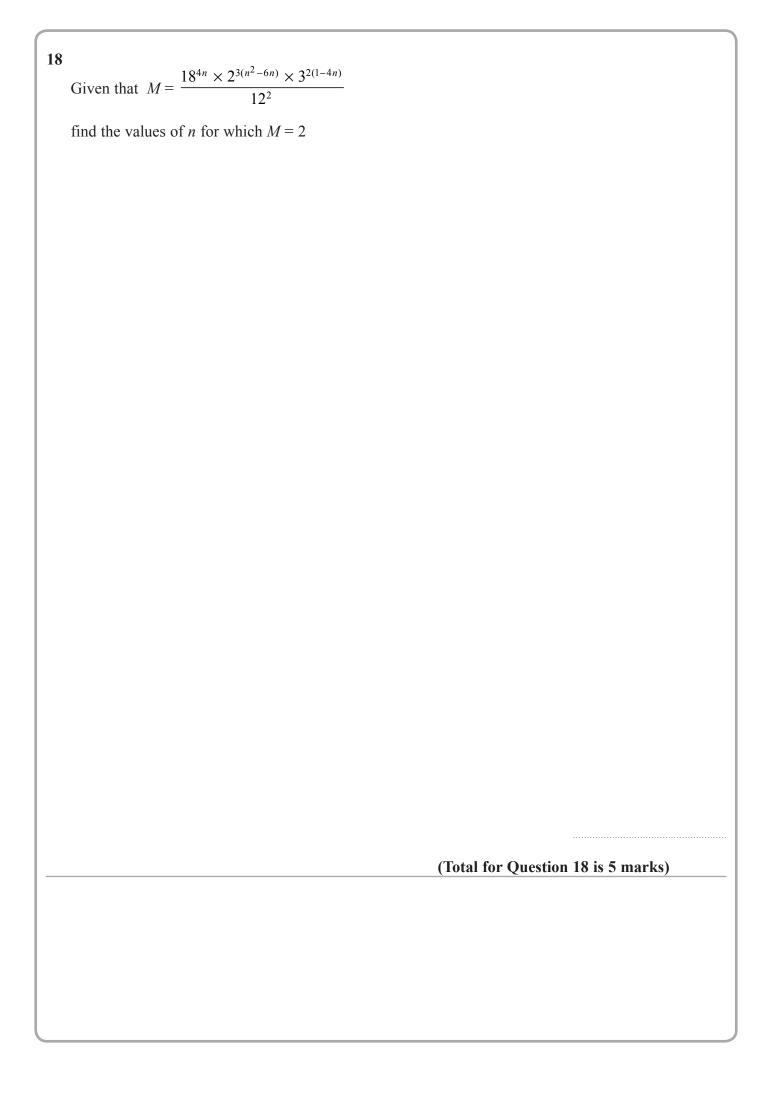
$$m =$$
 (1)

(3)

(Total for Question 16 is 4 marks)

17	$\frac{18 \times \left(\sqrt{27}\right)^{4n+6}}{6 \times 9^{2n+8}} = 3$
	Express x in terms of n Show your working clearly and simplify your expression.

v =



19	Find the values of <i>n</i> such that		
		$10^{4n} \vee 2^{3(n^2-5n)} \vee 5^{20}$	(1-2n)
		$\frac{10^{4n} \times 2^{3(n^2 - 5n)} \times 5^{20}}{20^2}$	= 1
		20	
	Show clear algebraic working.		
_			(Total for Question 19 is 5 marks)

20 (a) Write $2x^2 + 16x + 35$ in the form $a(x+b)^2 + c$ where a, b, and c are integers.	
	(2)
(b) Hence, or otherwise, write down the coordinates of the turning point of the graph	(3)
of $y = 2x^2 + 16x + 35$	
	(1)
(Total for Question 20 is 4 n	(1) narks)
	,

q +	$12x - qx^2$
an be written as $a - b(x - c)^2$	
	<i>a</i> =
	<i>b</i> =
	c =
	(Total for Question 21 is 4 marks)