

**Expanding, simplifying, and factorising**

1. May 2019 (1H) Q3

(d) Factorise fully  $16c^4p^2 + 20cp^3$

.....  
(2)

2. May 2019 (1H) Q12

(a) Factorise  $2x^2 - 7x + 6$

.....  
(2)

3. June 2019 (2HR) Q5

Factorise  $x^2 - 5x - 36$

.....  
**(Total for Question 5 is 2 marks)**

14. June 2018 (1H) Q11

(a) Expand and simplify  $(2x - 1)(x + 3)(x - 5)$

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(3)

15. Jan 2018 (3H) Q21

Factorise completely  $(10a - b)^2 - (2a - 5b)^2$

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**(Total for Question 21 is 3 marks)**

**Fractions**

1. June 2019 (2HR) Q2

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

.....  
**(Total for Question 22 is 3 marks)**

15. June 2017 (3H) Q22

Simplify fully  $\frac{3}{2x+12} - \frac{x-15}{x^2-2x-48}$

Show clear algebraic working.

[ 5 marks ]

16. June 2018 (1H) Q15

(b) Express  $\frac{1}{9x^2-25} - \frac{1}{6x+10}$  as a single fraction in its simplest form.

[ 3 marks ]

17. June 2018 (2HR) Q22

Express  $\frac{4x^2 - 25}{5x^2 + 2x - 7} \times \left( \frac{2}{x-3} - \frac{3}{2x-5} \right)$  as a single fraction in its simplest form.

[ 4 marks ]

18. June 2018 (3H) Q15

(a) Write  $\frac{2}{x} - \frac{1}{x+3}$  as a single fraction in its simplest form.

[ 3 marks ]

**Completing the square****1. June 2018 (2H) Q21**

- (c) Express  $x^2 + 6\sqrt{2}x - 1$  in the form  $(x + a)^2 + b$   
Show your working clearly.

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(2)

**3. June 2019 (2HR) Q22**

Write  $5 + 12x - 2x^2$  in the form  $a + b(x + c)^2$  where  $a$ ,  $b$  and  $c$  are integers.

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**(Total for Question 22 is 4 marks)**

4. Jan 2019 (2HR) Q20

(a) Write  $3x^2 - 12x + 7$  in the form  $a(x + b)^2 + c$

(3)

The line **L** is the line of symmetry of the curve with equation  $y = 3x^2 - 12x + 7$

(b) Using your answer to part (a) or otherwise, write down an equation of **L**.

(1)

(Total for Question 20 is 4 marks)