

1) Divide  $4x^5 - 3x^4 + 5x^2 - 6x + 8$  by  $x^2 - 2x + 5$

2) Find m if we know the remainder = 9 in the following division:

$$(-x^3 + x^2 - mx + 1) : (x - 5)$$

3) Factorise, a)  $P(x) = x^3 - x^2 - 5x - 3$

b)  $Q(x) = 3x^4 - 5x^3 - 33x^2 + 23x - 12$

4) Find the remainder in the following division:  $(3x^{25} - 2x^{10} + 1) : (x + 1)$

5) Simplify each of the following algebraic fractions.

a)  $\frac{x^3 - 2x^2 - 15x}{x^2 - x - 20}$       b)  $\frac{x^2 - 25}{2x^2 - 12x + 10}$

6) Calculate and simplify:

a)  $\frac{x}{1 - x^2} : \frac{3}{1 + x}$       b)  $\frac{x + 1}{x^2 - x} - \frac{2x - 1}{x^2}$

7) Simplify, expressing as a single fraction:

a)  $\frac{\frac{1}{x^2} - \frac{1}{x}}{\frac{1}{x} - x} + 1$       b)  $\frac{\frac{1}{x} \cdot \frac{2}{x}}{1 + \frac{1}{x^2}}$

8) Solve :

$$4x^4 - 17x^2 + 4 = 0$$

1	2	3	4	5	6	7	8
1,5	1	1	1	1	1,5	2	1

MATHS TEST  
December 2012

4° ESO \_ 2012.

Name:.....N°:.....course:...