#### QUESTION 1: FACTORISE

1.1 Factorise the following expression completely:

$$x\left(\frac{2x^2}{x} - \frac{3xy}{x}\right) + y\left(\frac{2xy}{y} - \frac{3y^2}{y}\right) \tag{3}$$

1.2 When  $f(x) = 3ax^3 + 2x^2 - 7x + 3$  is divided by 2x + 1 the remainder is  $-\frac{a}{2}$ .

Determine the value or values of 
$$a$$
. (5)

1.3 Simplify the following expression:

$$\frac{b}{a+b} + \frac{a}{a-b} + \frac{2ab}{b^2 - a^2}$$
 (6)

[14]

#### **QUESTION 2: FACTORISE - AUG 18**

2.1 Simplify the following algebraic fraction:

$$\frac{x^2 - 4}{3x^2 + 4x - 4} + \frac{x^2 - 4x + 4}{2x^2 - 11x + 14} \times \frac{3x - 2}{6x - 21}$$
 (5)

2.2 When f(x) is divided by 2x-3 the remainder is 4.

Determine the value of 
$$p$$
 if  $f(x) = 2x^3 - px^2 + 6x - 5$ . (4)

- 2.3 Factorise the following expression completely: ax + 9by - 3ay - 3bx (3)
- 2.4 Simplify the following expression:

$$\frac{x+9x^{\frac{1}{2}}}{x+7x^{\frac{1}{2}}-18} \div \left(1-\frac{2}{x^{\frac{1}{2}}}\right)^{-1}$$

(5) [17]

#### QUESTION 3: FACTORISE

3.1 Factorise the following as far as possible in prime factors:

3.1.1 
$$5x^4 - 5y^8$$

3.1.2 
$$15x^2y^2 - 25xy^3 - 10y^4$$
 (2 × 3) (6)

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