**AS Pre-Test A**

**You may NOT use a calculator**

If *ax*2 + *bx* + *c* = 0 then *x* **= **

1. **Expand and simplify:**

 (a) (3*x* + 1)(2*x* – 3) **(2 Marks)**

 (b) (*b* - 3)2 **(2 Marks)**

2. **Factorise:**

(a) 2*x*2 – 8*x* **(1 Mark)**

(b) *y*2 – 144 **(2 Marks)**

(c) 2*x*2 + 3*x* – 5 **(2 Marks)**

3. **Simplify:**

 (a)  **(2 Marks)** (b) +  **(4 Marks)**

4. **Solve the following equations:**

 (a) +  = 4 **(3 Marks)** (b) *p*2 - 6*p* = 16 **(3 Marks)**

5. **Write each of the following as single powers of *x* and y**:

 (a) **( 1 Mark)** (b)  **(1 Mark)**

6. **Work out the values of the following, giving your answers as fractions**

 (a) 3-2 **(1 Mark)** (b) 70 **(1 Mark)** (c)  **(2 Marks)**

7. **Solve the simultaneous equations:** 2*x* + 3y = -3 **(4 Marks)**

 5*x* + 2y = 20

8. **Rearrange the following equations to make *x* the subject:**

 (a) *v*2 = 4u2 + 2b*x* **(2 Marks)**  (b) y =  **(3 Marks)**

9. **Solve** 5*x*2 – 8*x* + 2 = 0 **giving your solutions in surd form** **(4 Marks)**