**Test 2: Algebra 2**
**Time: 1 hour** **Marks: 50**

**Question 1**

1.1 Show that $(2x-1)^2-(x-3)^2$ can be simplified to $(x+2)(3x-4)$ (6)

1.2 Solve for $x$:

1.2.1 $2x^2-x-3=0$ (3)

1.2.2 $x(2x+3)=2$ (4)

1.3 Represent graphically: $-5<\frac{3x-1}{2}\leq 10\ for\ x\epsilon\ R$ (5)

1.4 Solve the following system of equations:
$3x-2y+8=0$ and $4y-6=2x$ (6)
**[18]**

Question 2

One side of a rectangular field is $(x-y)$ metres long. Given that the area is $(x^2-x+y-y^2)$ square metres, calculate the perimeter in terms of $x$ and $y$
**[8]**

Question 3

3.1 Simplify the following expressions(Give your answer with positive exponents)

3.1.1 $\left(\frac{9x^2}{y^4}\right)^{-\frac{1}{2}}$ (3)

3.1.2 $\frac{(2^{x+1})^2}{\sqrt{64}}$ (3)

3.1.3 $\frac{9x^2y^3\times 6x^7y^5}{12xy^6}$ (4)

3.1.4 $\left(\frac{x^3y^{-2}}{z^{-2}}\right)^2\div\left(\frac{x^{-2}y^3}{z^3}\right)^{-2}$ (4)

3.2 Solve for $x$ if

3.2.1 $2^{2x-1}=64$ (3)

3.2.2 $4^x=8^{x-1}$ (3)

3.2.3 $5^{x-1}=0{,}04$ (4)
**[24]**