MPM 2DB

**Unit 3 – Practice Test:** Analytic Geometry

*Formulas:*    

Short Answer **(K22)**

1. Find the **exact length** of the line segment joining **V**(-3,2) and **W**(4,1). **(3)**
2. State the **centre** and **radius** for the following circles **(4)**

a) x2 + y2 = 144 b) (x + 5)2 + (y – 9)2 = 100

1. Write the **equation** of a circle with centre (4, 12) and radius 1 **(3)**
2. Find the **midpoint** of the line segment between **G**(9, 2) and **H**(11, -6). **(3)**
3. For the line segment **AB**, one endpoint is at **A**(1, 4) and the midpoint is at **M**(5, -6).

Find **the other endpoint** **B**. **(4)**

1. Find the equation of a line that is parallel to ***4x – 2y + 11 = 0***, going through the point **(-3, 10).** **(5)**

(express your equation in standard form)

1. For the line :
2. State the slope that is perpendicular to the line **(2)**

1. Re-write the original equation in standard form **(3)**

Part C: Communication Level **( 1 / 2 / 3 / 4 )**

1. Quadrilateral **RSTU** has vertices **R**(3,2), **S**(0,4), **T**(-2,1), and **U**(1,-1).

Explain, **in words (point form)**, how you could verify that the diagonals of **RSTU** ***perpendicularly bisect*** each other.

Part D: Application **(30)**

***\*\*Choose 3 out of the 4 questions (worth 10 each)***

1. Determine the **equation of the right bisector** of the line segment joining **A**(-3,5) and **B**(3,-7)
2. Quadrilateral **DEFG** has vertices **D**(-2,-3), **E**(-1,7), **F**(8,7), and **G**(6, -1)

Determine the **approximate perimeter** of **DEFG**.

1. Find the **shortest distance** from the **origin** to the line **y = -2x + 1** (*approximate* to 2 decimals)
2. **ABC** is an isosceles triangle with vertices **A**(2,2), **B**(6,10), and **C**(8,2).

A smaller triangle can be formed by **connecting the midpoints** of each line segment of **ABC**.

**Verify** that this new triangle is **also *isosceles***.