MPM 2D1 Quest on Analytic Geometry Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- |
| Knowledge | Application | TIPS |
|  |  |  |

***Knowledge:***

1. Given the points then determine the following:
2. the slope of the line passing through . \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[2]

1. the slope of the line perpendicular to the line segment .

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[2]

1. the midpoint of the line segment . \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[2]

d) the exact length of the line segment . \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[2]

1. Determine the equation of the line in **standard form** that is **perpendicular** to the line  and passes through the point.

[4]

***Application:***

1. The point is the midpoint of the line segment JK. If endpoint J is located at and K is located at , find the value of the missing coordinates.

[4]

1. Linear10numberedOn the grid below, draw triangle with vertices  Draw a labelled diagram of the median from . Determine algebraically the length of the median from 

[4]

1. Linear10numberedOn the grid below, draw triangle with vertices  . Draw a labelled diagram of the altitude from . Determine algebraically the equation of the altitude.

[5]

1. Linear10numberedThe coordinates of two towns are Plot and label the two towns on the grid below. Draw a labelled diagram of the perpendicular bisector of the line segment joining these two towns. Determine algebraically the equation of the perpendicular bisector. If the two towns have decided to build a recreation centre at , determine if this is a good place to build. Justify your answer.

[8]

***TIPS:***

1. Linear10numberedDetermine the shortest distance from the point to the line . Include a fully labelled diagram. Include an algebraic solution.

[10]