Problem solving activities

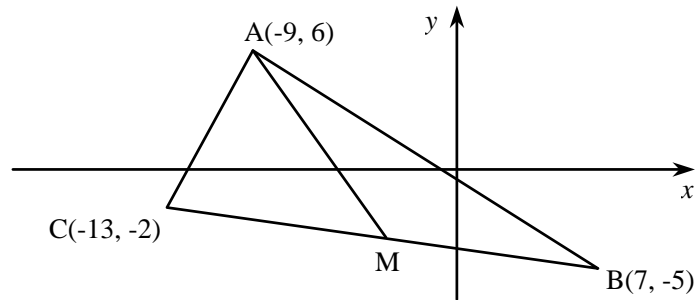1.

Line l passes through point P (5, 8) in the Cartesian plane. Line l is parallel to l_2 whose equation in general form is $8x - 2y + 7 = 0$.

What is the equation of line l?

Key Information	Link to Concepts Taught

Planning of work:

Work:

2. In the Cartesian plane below, segment AM is a median of triangle ABC.

A(-9, 6)

y

C(-13, -2)

M

B(7, -5)

x

What is the perimeter of triangle AMB?
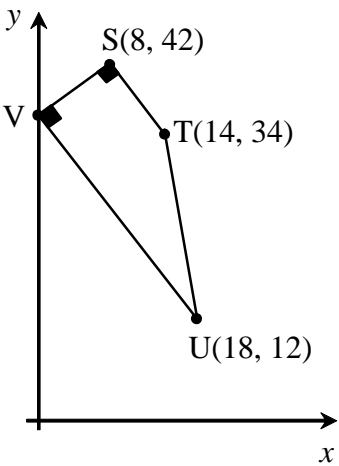
Key Information	Link to Concepts Taught

Planning of work:

Work:

3

Right trapezoid STUV is represented in the Cartesian plane on the right.

The coordinates of vertices S, T and U are S(8, 42), T(14, 34) and U(18, 12).
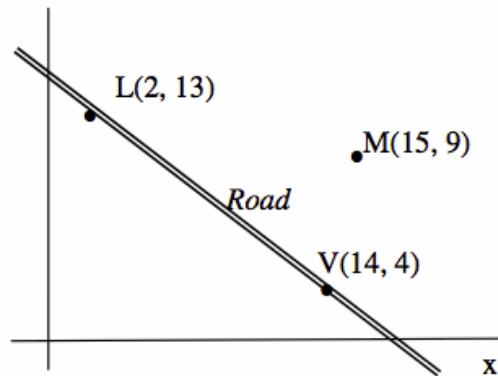
Vertex V is located on the *y*-axis.

y

S(8, 42)

V

T(14, 34)

U(18, 12)

x

What are the coordinates of vertex V?

Key Information	Link to Concepts Taught

Planning of work:

Work:

4.

Lucy and Veronica agreed to meet at a restaurant located on the road joining the towns where they live. Maggie also plans to meet them at the same restaurant.
In the graph below, the towns they live in are represented by the points L (Lucy), V (Veronica) and M (Maggie). The line passing through L and V represents the road. The scale on the graph is in km.

L(2, 13)

M(15, 9)

Road

V(14, 4)

x

Lucy and Veronica live exactly the same distance from the restaurant. Calculate how far Maggie's town is from the restaurant. Be sure to show all steps logically in your solution and round the final answer to the nearest tenth of a km.
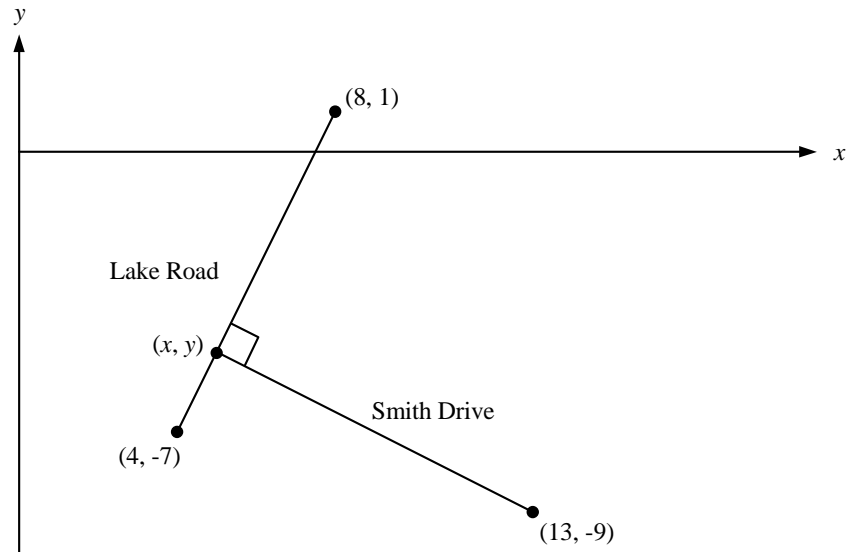
Key Information	Link to Concepts Taught

Planning of work:

Work:

5.
Lake Road passes through points (4, -7) and (8, 1) on the Cartesian map below, scaled in kilometres.

Pietra lives on Smith Drive at the location given by the coordinates (13, -9).
She wants to jog to Lake Road, which is perpendicular to Smith Drive.

What are the coordinates (x, y) of the point at which Pietra reaches Lake Road?

Key Information	Link to Concepts Taught
Planning of work:	
Work:	