Review Sheet for Topic 3 - Logic & Topic 5 - Geometry

Final Exam Review Test

1. *P* (4, 1) and *Q* (0, –5) are points on the coordinate plane.

    a.   Determine the:

       i.   Coordinates of *M*, the midpoint of *P* and *Q*;

       ii.   Gradient of the line drawn through *P* and *Q*;

       iii.   Gradient of the line drawn through M, perpendicular to PQ.

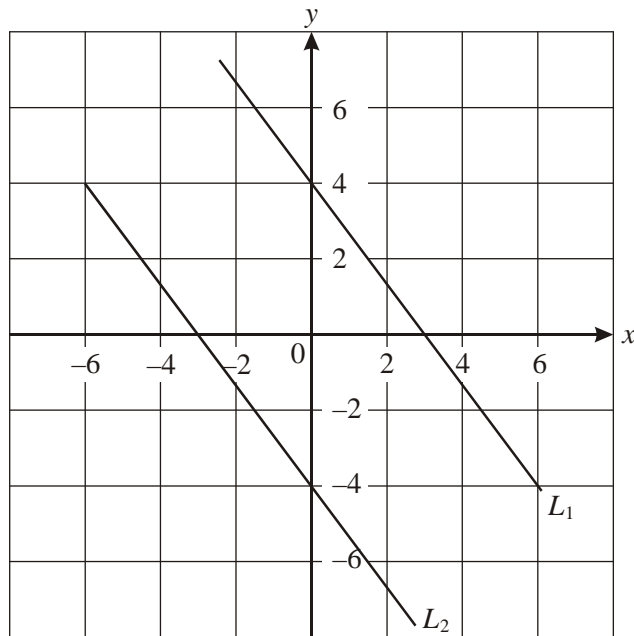The perpendicular line drawn through M meets the y-axis at R (0, k).

    b. Find *k*.

Working:

Answers:

(a)   (i)...

        (ii)...

        (iii)...

(b) ....

(Total 6 marks)

2. In the diagram, the lines L_1 and L_2 are parallel.

a)   What is the gradient of L_1?

b)   Write down the equation of L_1.

c)   Write down the equation of L_2 in the form $ax + by + c = 0$ (e.g. $3x + \frac{1}{2}y - 5 = 0$)
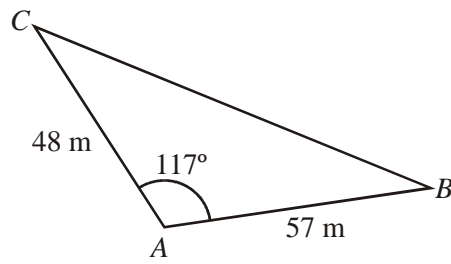
Working:

Answers:
(a) …………………………………………..
(b) …………………………………………..
(c) …………………………………………..

(Total 4 marks)

3. The diagram shows the plan of a playground with dimensions as shown.

Calculate

    a)   The length *BC*;
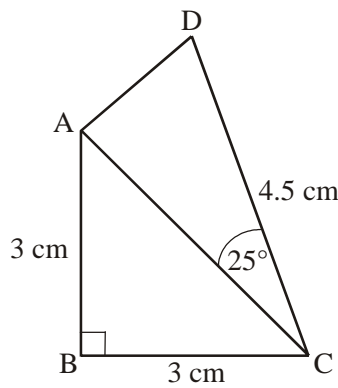
    b)   The area of triangle *ABC*.

Working:

Answers:

(a) …………………………………………..

(b) …………………………………………..

(Total 4 marks)

4.

In the diagram, AB = BC = 3 cm, DC = 4.5 cm, angle $A\hat{B}C = 90$ and angle $A\hat{C}D = 25$.

    a)   Calculate the length of AC.

    b)   Calculate the area of triangle ACD.

    c)   Calculate the area of quadrilateral ABCD.

Working:

Answers:

(a) ....

(b) ....

(c) ....

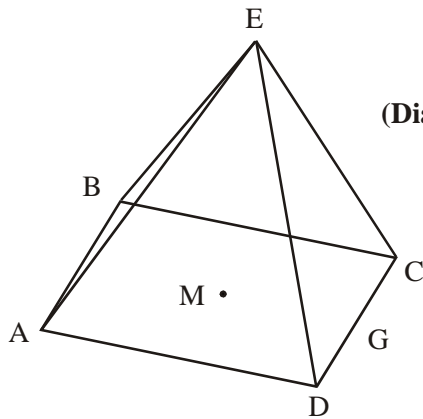**(Total 8 marks)**

5. The triangular faces of a square based pyramid, ABCDE, are all inclined at 70 to the base. The edges of the base ABCD are all 10 cm and M is the center. G is the mid-point of CD.

(Diagram not to scale)

a) Using the letters on the diagram draw a triangle showing the position of a 70 angle.

(1)

(b) Show that the height of the pyramid is 13.7 cm, to 3 significant figures.

(2)

(c) Calculate

(i) The length of EG;

(ii) The size of angle DÊC .

(4)

(d) Find the total surface area of the pyramid.

(2)

(e) Find the volume of the pyramid.

(2)

(Total 11 marks)

7. A poll was taken of the leisure time activities of 90 students.

60 students watch TV (*T*), 60 students read (*R*), 70 students go to the cinema (*C*).
26 students watch TV, read **and** go to the cinema.
20 students watch TV and go to the cinema only.
18 students read and go to the cinema only.
10 students read and watch TV only.

(a) Draw a Venn diagram to illustrate the above information.

(b) Calculate how many students

    (i) Only watch TV;

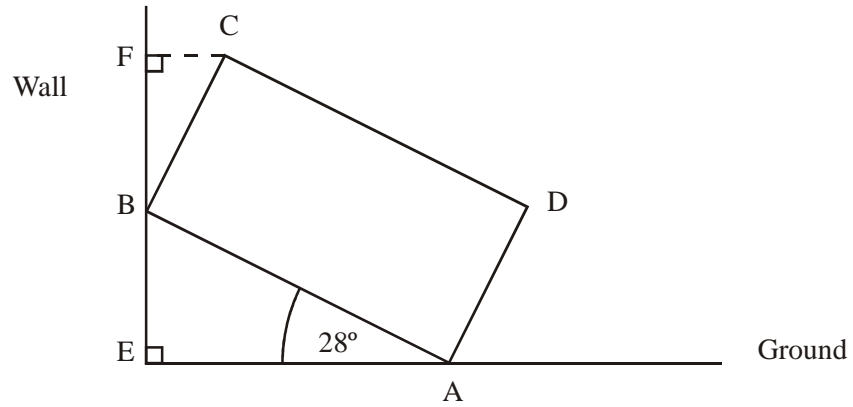   (ii) Only go to the cinema.

Diagram:

Working:

Answers:

(b) (i) ……………………………………..
     (ii) ……………………………………..

(Total 8 marks)

8. A rectangular block of wood with face ABCD leans against a vertical wall, as shown in the diagram below. AB = 8 cm, BC = 5 cm and angle $\hat{BAE}$ = 28°.

Find the vertical height of C above the ground.

Working:

Answer:

....

(Total 4 marks)