S4S coaching
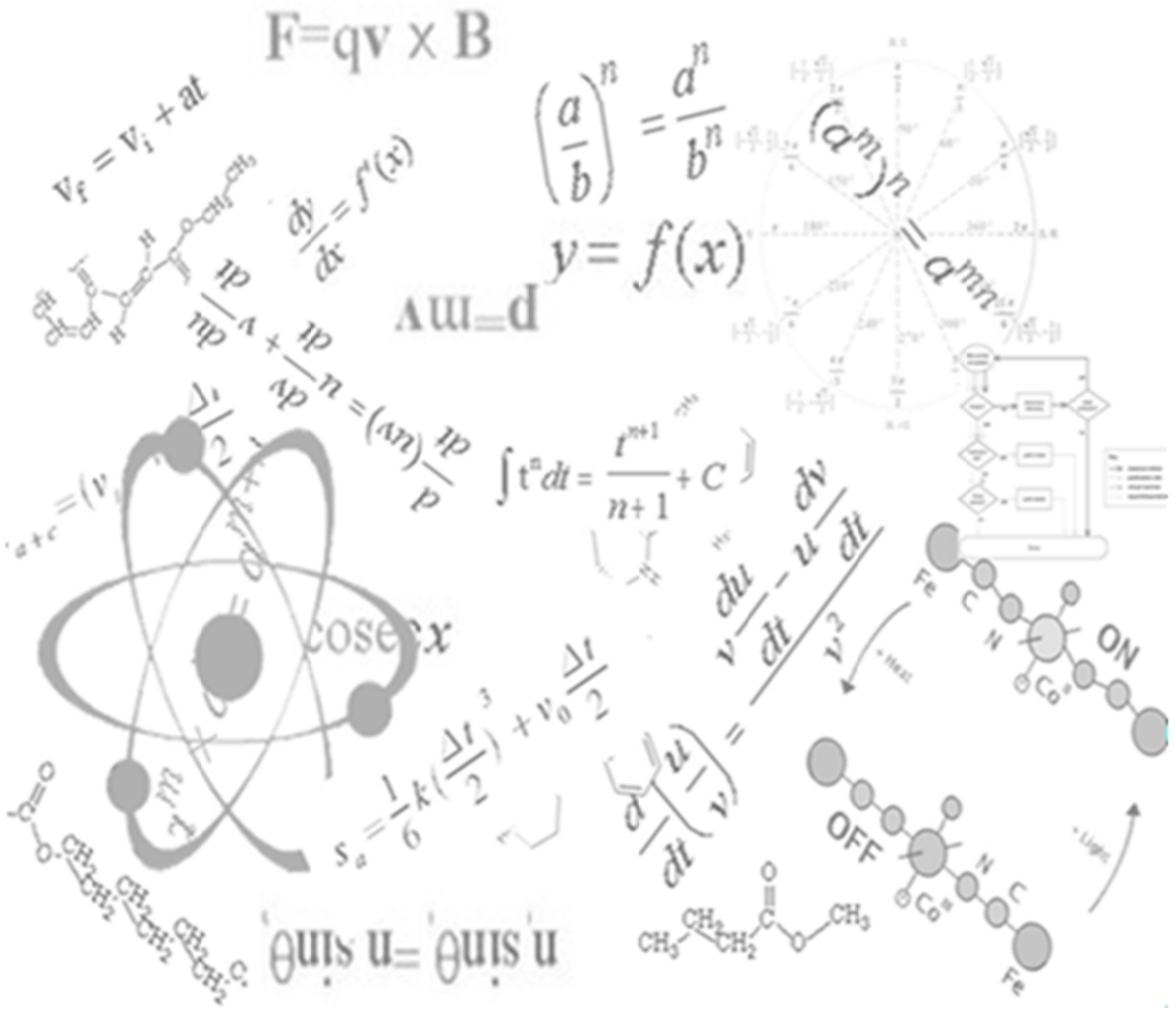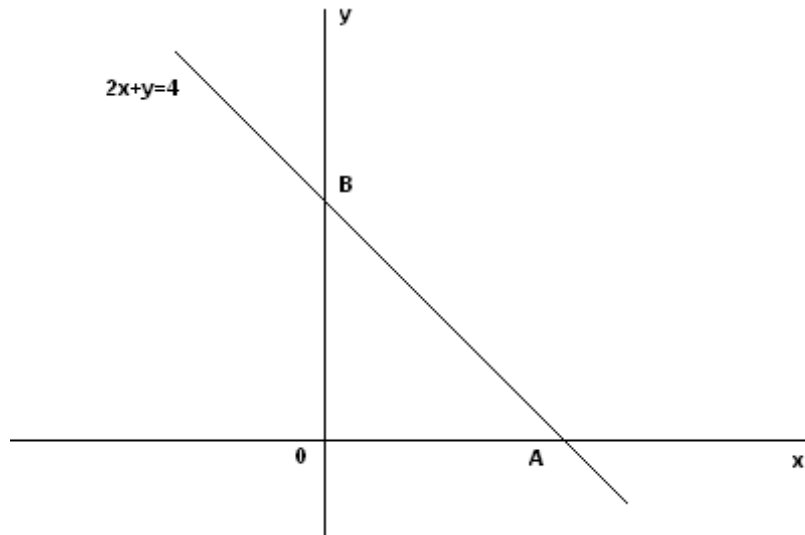
Year 11- Mathematics Advanced

Coordinate Methods in Geometry

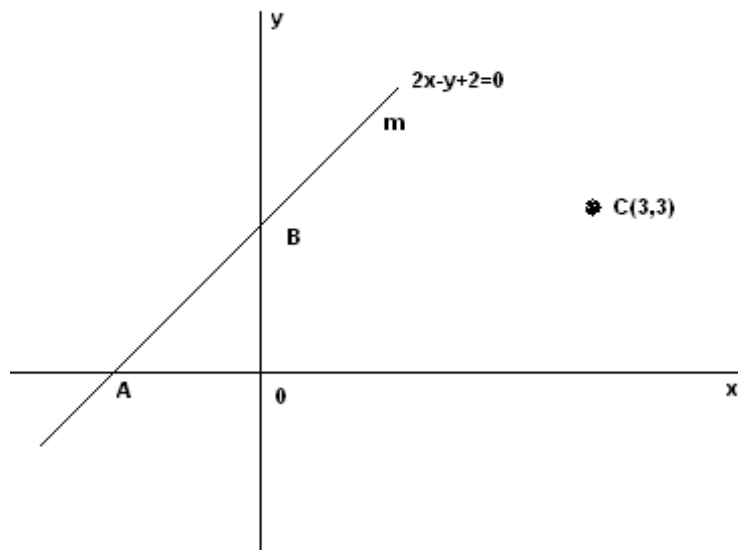# Coordinate methods in geometry Exam /53

1. (**8 marks**)

i) Find the coordinates of A and B
ii) find the perpendicular distance of the point C(5,2) from the line 2x+y=4
iii) Find the gradient of the line AC and the equation of the line AC
iv) Find the distance AB
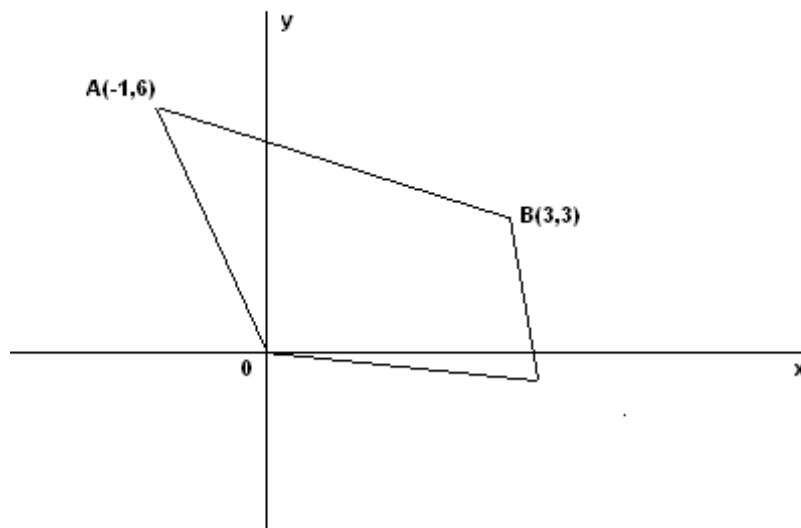v) find the exact area of triangle ABC

2. (**4 marks**)

i) Find the coordinates of A and B
ii) Find the gradient AB
iii) Write the equation of the line 'n', through C perpendicular to AB and find the size of the angle between the line 'n' and the x-axis

3. (**4 marks**)
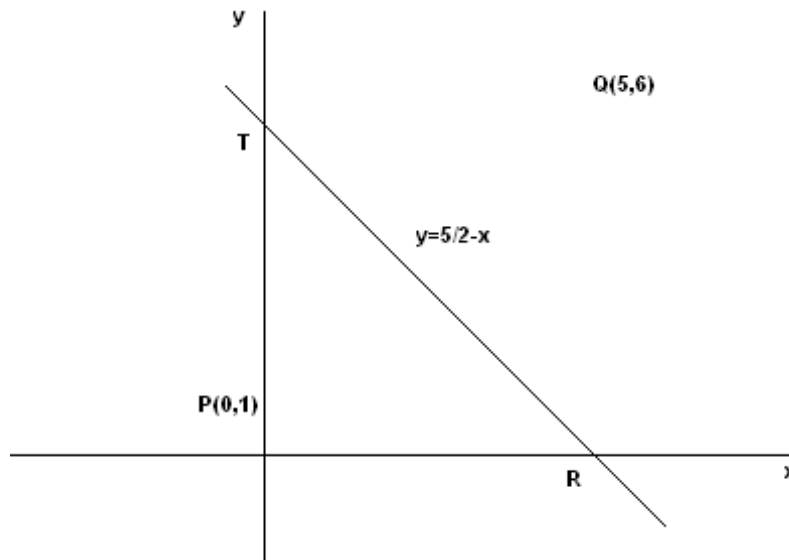
i) Find the size of the angle which the line PQ makes with the x-axis and find the equation of this line.

ii) Find the coordinates of M, the point where PQ intersects RT

iii) Find the perpendicular distance from P to the line RT

iv) In your diagram shade the region which satisfies: $x-y+1 \geq 0$, $2x+2x \leq 5$ and $y \geq 0$.

4. (**6 marks**)

i) Find the equation of the line AB

ii) Find the perpednicular distance from 0 to AB

iii) Find the area of the parallelogram.

5. (**10 marks**)
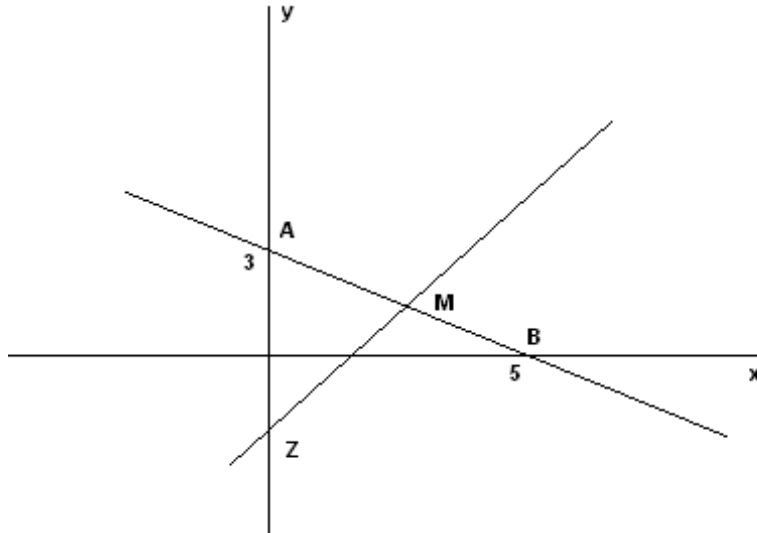
i) Find the gradient of AB and find the coordinates of M, the midpoint of AB

ii) Find the equation of the line MZ given that this line is perpendicular to AB and find the distance ZB

iii) hence find the equation of the circle with centre Z and radius ZB

6.   (**8 marks**)
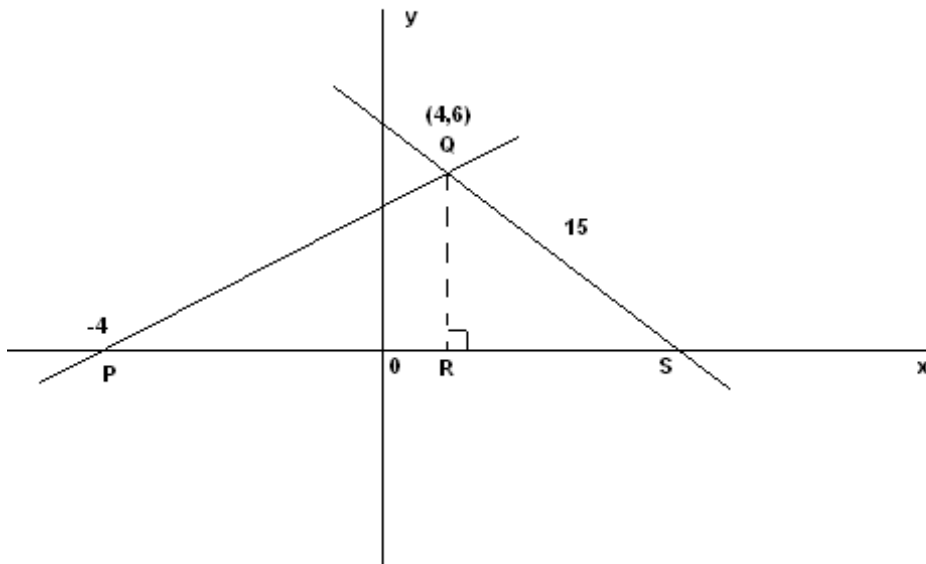
i) Find the gradient of PQ and the equation of the line PQ

ii) FInd the size of angle ∠QPS

iii)Find the size of SR and find the area of triangle PQS

7.   (**4 marks**)
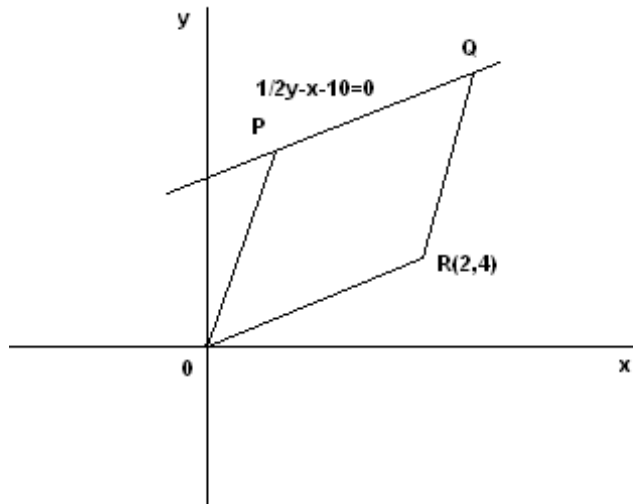
Show that PQ and OR are parallel and hence prove that $\angle PQO = \angle QOR$

8. (**3 marks**)

Shade the region where $y \leq -x + 1$ and $y \leq x$.

9. (**3 marks**)

Shade the region where $y < x+1$ and $y \leq 2 - x$

10. (**3 marks**)

Find f in $2y=3x+2$ and $y=(3f-4)x-10$ if the two lines are perpendicular and parallel.