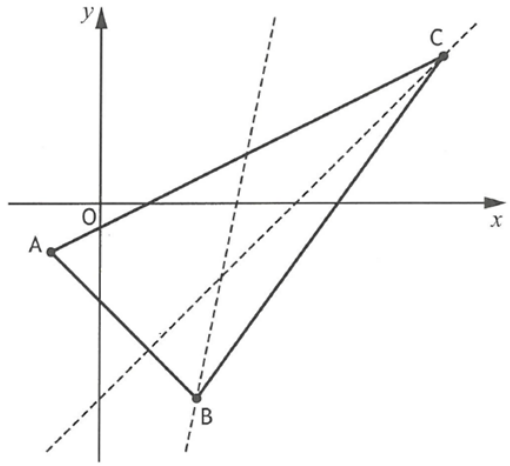
# SQA Past paper questions

## 2022 – Paper 2 – Question 1

Triangle ABC has vertices A(–1, –1), B(2, –4) and C(7, 3).




(a) Find the equation of the altitude through C. 3

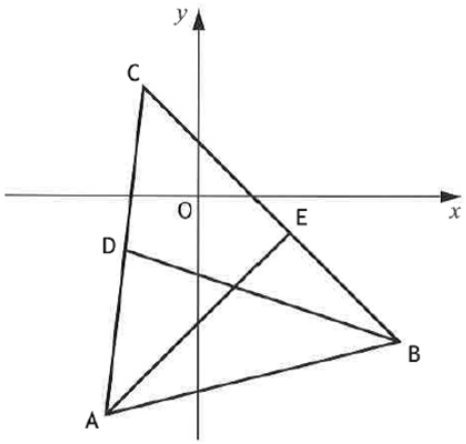
(b) Find the equation of the median through B. 3

(c) Determine the coordinates of the point of intersection of the altitude through C and the median through B. 2

Click here for video solution.

## 2019 – Paper 2 – Question 1

Triangle ABC has vertices A(–5, –12), B(11, –8) and C(–3, 6).




(a) Find the equation of the median BD. 3

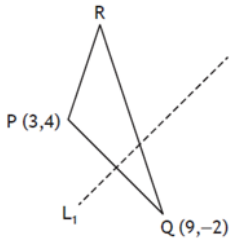
(b) Find the equation of the altitude AE. 3

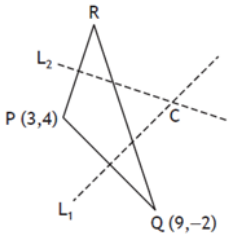
(c) Find the coordinates of the point of intersection of BD and AE. 2

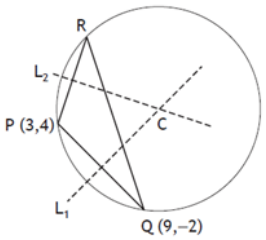
Click here for video solution.

## 2018 – Paper 2 – Question 5

PQR is a triangle with P(3,4) and Q(9,–2).




(a) Find the equation of $L_1$, the perpendicular bisector of PQ. 3

The equation of $L_2$, the perpendicular bisector of PR is $3y + x = 25$. 2

(b) Calculate the coordinates of C, the point of intersection of $L_1$ and $L_2$.

C is the centre of the circle which passes through the vertices of triangle PQR.

(c) Determine the equation of this circle. 2

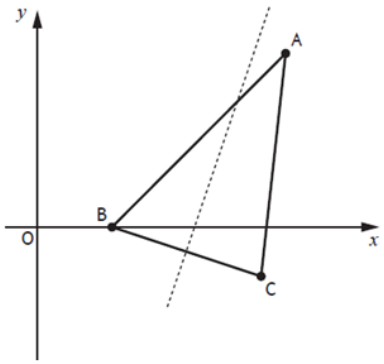
Click here for video solution.

## 2017 – Paper 2 – Question 1

Triangle ABC is shown in the diagram below.

The coordinates of B are (3,0) and the coordinates of C are (9,–2).

The broken line is the perpendicular bisector of BC.




(a) Find the equation of the perpendicular bisector of BC. 4

(b) The line AB makes an angle of 45° with the positive direction of the $x$-axis.
Find the equation of AB. 2

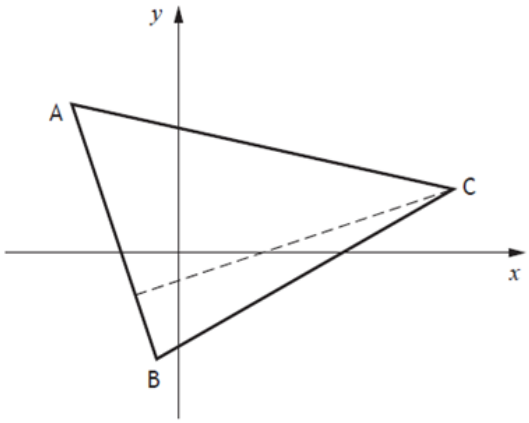
(c) Find the coordinates of the point of intersection of AB and the perpendicular bisector of BC. 2

Click here for video solution.

## 2015 – Paper 2 – Question 1

The vertices of triangle ABC are A$(-5, 7)$, B$(-1, -5)$ and C$(13, 3)$ as shown in the diagram.

The broken line represents the altitude from C.




(a) Show that the equation of the altitude from C is $x - 3y = 4$. 4

(b) Find the equation of the median from B. 3

(c) Find the coordinates of the point of intersection of the altitude from C and the median from B. 2

Click here for video solution.

## Exemplar – Paper 1 – Question 6

(a) Find the equation of $l_1$, the perpendicular bisector of the line joining P (3,–3) and Q (–1,9). 4

(b) Find the equation of $l_2$ which is parallel to PQ and passes through R (1,–2). 2

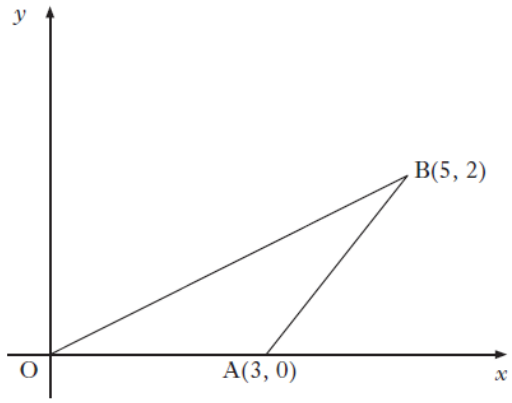
(c) Find the point of intersection of $l_1$ and $l_2$. 3

(d) Hence find the shortest distance between PQ and $l_2$. 2

Click here for video solution.

## 2014 – Paper 2 – Question 1

A(3, 0), B(5, 2) and the origin are the vertices of a triangle as shown in the diagram.




(*a*) Obtain the equation of the perpendicular bisector of AB. 4

(*b*) The median from A has equation $y + 2x = 6$.

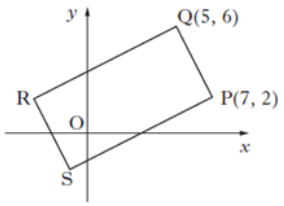
Find T, the point of intersection of this median and the perpendicular bisector of AB. 2

(*c*) Calculate the angle that AT makes with the positive direction of the $x$-axis. 2

Click here for video solution.

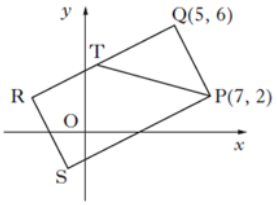
## 2013 – Paper 2 – Question 2

The diagram shows rectangle PQRS with P(7, 2) and Q(5, 6).




(*a*) Find the equation of QR. 3

(*b*) The line from P with the equation $x + 3y = 13$ intersects QR at T.




Find the coordinates of T. 3

(*c*) Given that T is the midpoint of QR, find the coordinates of R and S. 3

Click here for video solution.

## 2012 – Paper 1 – Question 23

(*a*) Find the equation of $\ell_1$, the perpendicular bisector of the line joining P(3, –3) to Q(–1, 9). 4

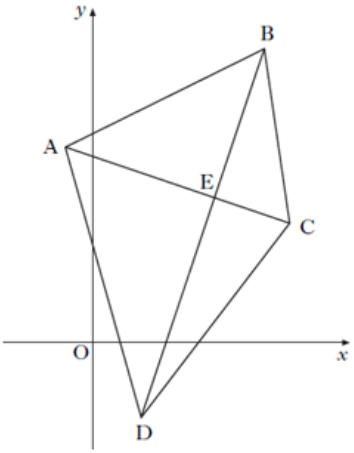
(*b*) Find the equation of $\ell_2$ which is parallel to PQ and passes through R(1, –2). 2

(*c*) Find the point of intersection of $\ell_1$ and $\ell_2$. 3

Click here for video solution.

## 2011 – Paper 1 – Question 21

A quadrilateral has vertices A(–1, 8), B(7, 12), C(8, 5) and D(2, –3) as shown in the diagram.




(*a*) Find the equation of diagonal BD.

(*b*) The equation of diagonal AC is $x + 3y = 23$. 2

Find the coordinates of E, the point of intersection of the diagonals. 3

(*c*) (i) Find the equation of the perpendicular bisector of AB.

(ii) Show that this line passes through E. 5

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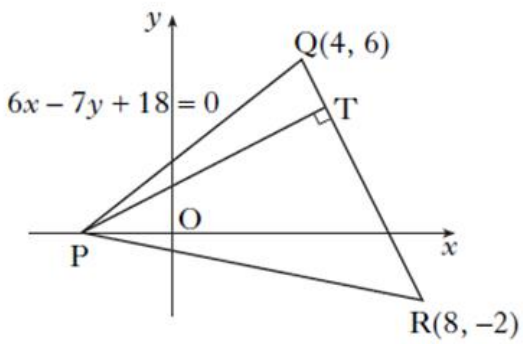
## 2009 – Paper 1 – Question 21




Triangle PQR has vertex P on the $x$-axis, as shown in the diagram.
Q and R are the points (4, 6) and (8, –2) respectively.
The equation of PQ is $6x - 7y + 18 = 0$.

(a) State the coordinates of P. **1**

(b) Find the equation of the altitude of the triangle from P. **3**

(c) The altitude from P meets the line QR at T. Find the coordinates of T. **4**

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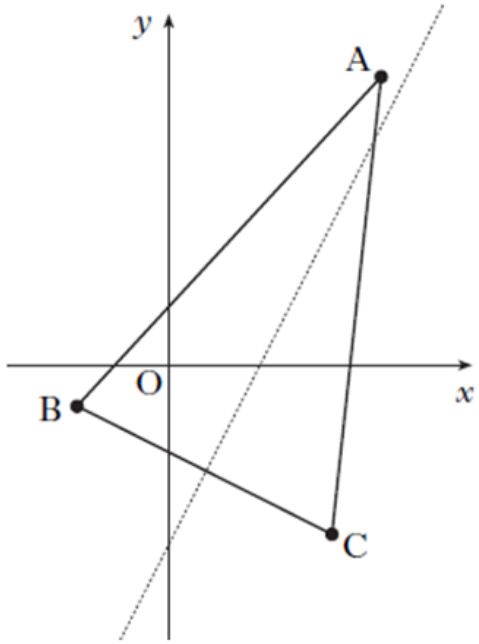
## 2008 – Paper 2 – Question 1




The vertices of triangle ABC are A(7, 9), B(–3, –1) and C(5, –5) as shown in the diagram.

The broken line represents the perpendicular bisector of BC.

(a) Show that the equation of the perpendicular bisector of BC is $y = 2x - 5$. **4**

(b) Find the equation of the median from C. **3**

(c) Find the coordinates of the point of intersection of the perpendicular bisector of BC and the median from C. **3**

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## Specimen 1 – Paper 2 – Question 1

Triangle ABC has coordinates A(2, 1), B(10, 1) and C(4, 7).

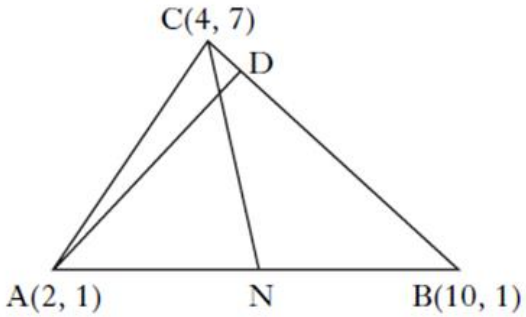
(*a*) Find the equation of the median CN. 3

(*b*) Find the equation of the altitude AD. 3

(*c*) The median from (*a*) and the altitude from (*b*) intersect at P. Find the coordinates of P. 3

(*d*) The point Q lies on AB and has coordinates (8, 1).

Show that PQ is parallel to BC. 2




Click here for video solution.

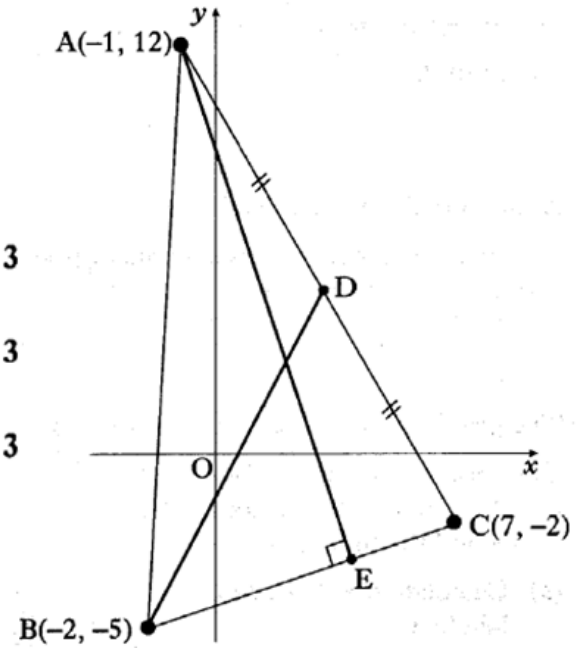
## 2006 – Paper 1 – Question 1

Triangle ABC has vertices A(–1, 12), B(–2, –5) and C(7, –2).

(*a*) Find the equation of the median BD. 3

(*b*) Find the equation of the altitude AE. 3

(*c*) Find the coordinates of the point of intersection of BD and AE. 3

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## 2004 – Paper 1 – Question 1

The point A has coordinates (7, 4). The straight lines with equations $x + 3y + 1 = 0$ and $2x + 5y = 0$ intersect at B.

(*a*) Find the gradient of AB. **3**

(*b*) Hence show that AB is perpendicular to only one of these two lines. **5**

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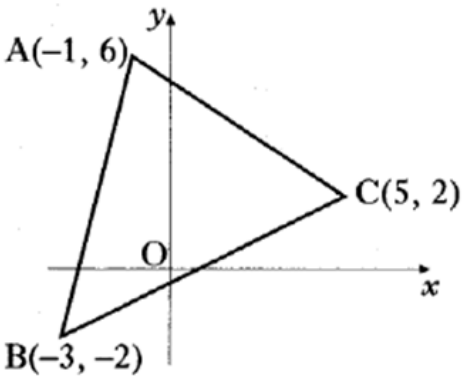
## 2002 – Paper 2 – Question 1




Triangle ABC has vertices A(–1, 6), B(–3, –2) and C(5, 2).

Find

(*a*) the equation of the line *p*, the median from C of triangle ABC. **3**

(*b*) the equation of the line *q*, the perpendicular bisector of BC. **4**

(*c*) the coordinates of the point of intersection of the lines *p* and *q*. **1**

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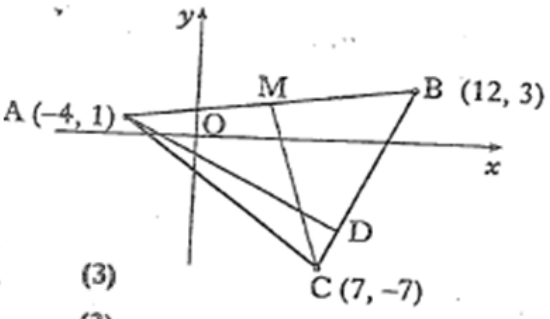
## 1999 – Paper 1 – Question 2




A triangle ABC has vertices A (–4, 1), B (12, 3) and C (7, –7).

(*a*) Find the equation of the median CM. (3)

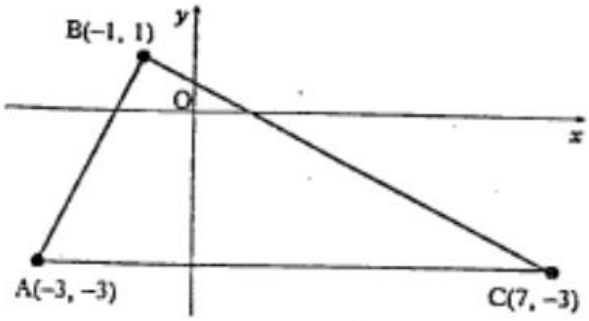
(*b*) Find the equation of the altitude AD. (3)

(*c*) Find the coordinates of the point of intersection of CM and AD. (3)

Click here for video solution.

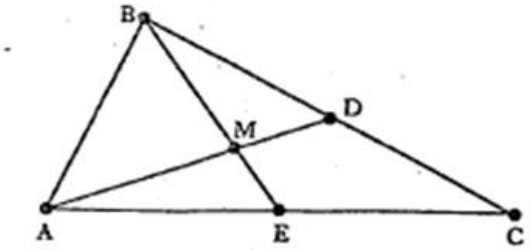
## 1996 - Paper 2 - Question 2

A triangle ABC has vertices A(–3, –3), B(–1, 1) and C(7, –3).




(a) Show that the triangle ABC is right-angled at B. **(3)**

(b) The medians AD and BE intersect at M.




**(5)**

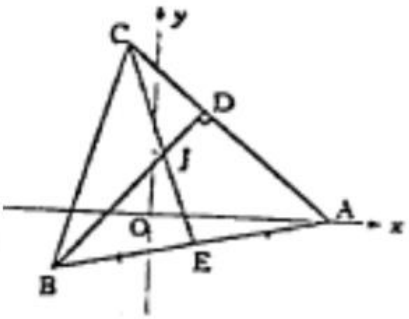
(i) Find the equations of AD and BE. **(3)**

(ii) Hence find the coordinates of M.

Click here for video solution.

## 1992 - Paper 1 - Question 2

In the diagram, A is the point (7, 0),
B is (–3, –2) and C (–1, 8).
The median CE and the altitude BD intersect at J.




(a) Find the equations of CE and BD.

(b) Find the coordinates of J. **(8)**

Click here for video solution.