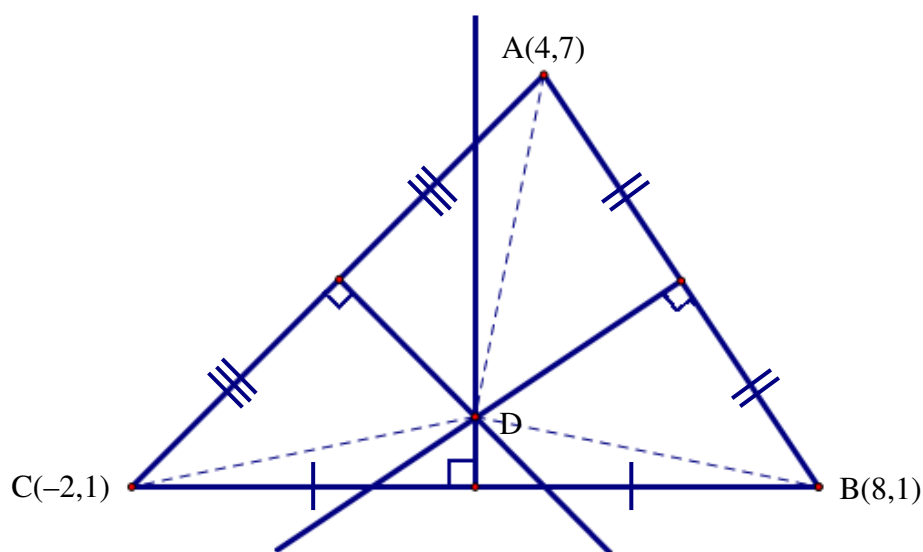


- 1 Find the equation of the straight line which passes through the point  $(-1,2)$  and is:
  - (a) parallel to the line with equation  $x = 2$
  - (b) perpendicular to the line with equation  $y + 3x = 0$
  - (c) parallel to the line with equation  $y - \frac{2}{3}x = 4$
  
- 2 Find the equation of the perpendicular bisector of the line joining  $P(2,3)$  and  $Q(8,-1)$ .
  
- 3 Find the equation of the median  $AD$  of the triangle  $ABC$  where the coordinates of  $A$ ,  $B$  and  $C$  are  $(-3,2)$ ,  $(-4,-3)$  and  $(4,1)$  respectively.
  
- 4  $D(-2,6)$ ,  $E(0,-3)$  and  $F(11,2)$  are the vertices of a triangle  $DEF$ . Find the equation of  $FG$ , the altitude from  $F$  to  $DE$ .
  
- 5 The perpendicular bisectors of the sides of a triangle are concurrent at a point which is equidistant from the vertices. i.e.  $AD = BD = CD$ . This point is called the circumcentre.



By solving the equations of two of the perpendicular bisectors, determine the coordinates of point  $D$  the circumcentre of triangle  $ABC$ .