

## **2G Loci**

1. The curve  $C$  is the locus of points that are equidistant from the line with equation  $x + 6 = 0$  and the point  $(6,0)$ . Prove that  $C$  has Cartesian equation  $y^2 = 4ax$ , stating the value of  $a$ .

2. The point  $P$  lies on a parabola with equation  $y^2 = 4ax$ . Show that the locus of the midpoints of  $OP$  is a parabola.