**2C Parabolas & Chords**

1. A point lies on the parabola C with equation . The point is the focus of the parabola. The line l passes through S and P.
2. Find the coordinates of .
3. Find an equation for , giving your answers in the form , where , , are integers.
4. The line meets the parabola again at the point . The point is the mid-point of . Find the coordinates of .
5. Find the coordinates of .
6. Draw a sketch showing parabola , the line   
   and the points , , and .
7. The parabola has general point . The line intersects at the points and . Find, in terms of and , the length of the chord .