9 The points P and Q have coordinates $(-2, 5)$ and $(2, -3)$ respectively.

(a) Find an equation for the line PQ.

(2)

The point N is such that PNQ is a straight line and $PN : NQ = 3 : 1$

The straight line l passes through N and is perpendicular to PQ.

(b) Find

(i) the coordinates of N,

(ii) an equation for l.

(5)

The points S and T lie on l and have coordinates $(3, s)$ and $(t, -2)$ respectively.

(c) Find

(i) the value of s,

(ii) the value of t.

(2)

(d) Find the area of the quadrilateral $PSQT$.

(4)

Question 9 continued

Question 9 continued

Question 9 continued

(Total for Question 9 is 13 marks)