

**10.** A circle  $C$  has centre  $(2, 5)$ . Given that the point  $P(-2, 3)$  lies on  $C$ .

(a) find an equation for  $C$ .

**(3)**

The line  $l$  is the tangent to  $C$  at the point  $P$ . The point  $Q(2, k)$  lies on  $l$ .

(b) Find the value of  $k$ .

**(5)**

**(Total for Question 10 is 8 marks)**