

**2.** The circle  $C$  has equation

$$(x + 3)^2 + (y - 4)^2 = 24$$

(a) (i) State the coordinates of the centre of  $C$ .

(ii) Find the radius of  $C$  writing your answer as a fully simplified surd.

**(3)**

(b) Determine, giving a reason, whether or not the origin lies inside the circle  $C$ .

**(2)**