**6E Applying Circle Theorems**

1. The line 4x – 3y – 40 = 0 is a tangent to the circle (x – 2)2 + (y – 6)2 = 100 at P = (10,0). Show that the radius at P is perpendicular to this line.

1. A circle C has equation:

$$\left(x-5\right)^{2}+\left(y+3\right)^{2}=10$$

The line $l$ is a tangent to the circle and has gradient -3. Find the two possible equations for $l$, giving your answers in the form $y=mx+c$.