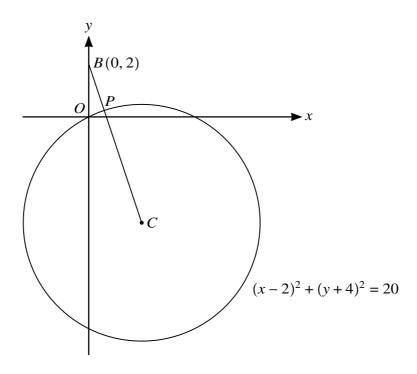The diagram shows the circle with equation $(x-2)^2 + (y+4)^2 = 20$ and with centre C. The point B has coordinates $(0, 2)$ and the line segment BC intersects the circle at P.

(a) Find the equation of BC. [2]

....

....

....

....

....

....

....

....

....

....

....

....

....

(b) Hence find the coordinates of P, giving your answer in exact form. [5]