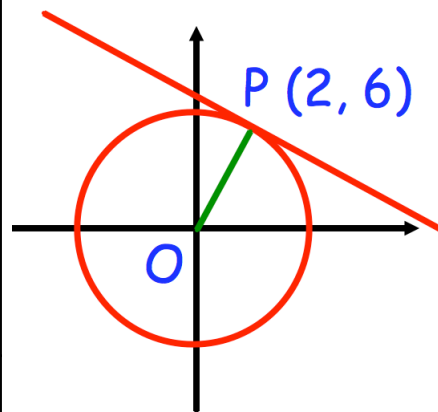


**9th December**

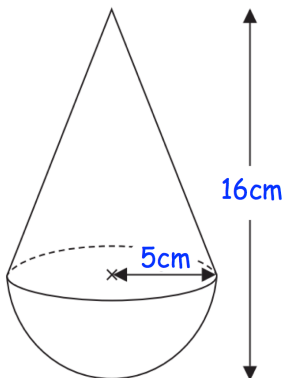
Corbettmaths

The diagram shows the circle  
 $x^2 + y^2 = 40$  with a tangent at the point  
 (2, 6)

Find the gradient of the tangent



Find the equation of the tangent



Shown above is a solid made from a  
 cone and a hemisphere.

Find the volume of the solid

The solid is made from a material with  
 density  $3.4\text{g/cm}^3$

Find the mass of the solid

$$f(x) = x^2 + 2$$

$$g(x) = 5 - x$$

Arrange in order

$$fg(3) \quad gf(3) \quad ff(3) \quad gg(3)$$