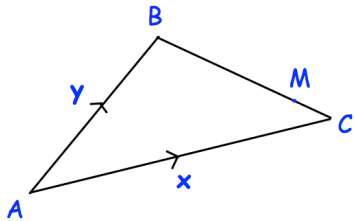




Write down the exact value of

$$\tan 30^\circ + \tan 60^\circ$$



ABC is a triangle.

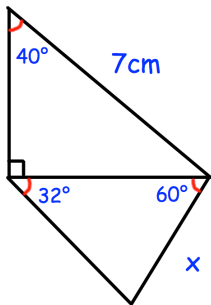
M lies on BC such that  $BM = \frac{3}{4} BC$

Express  $\vec{AM}$  in terms of  $\mathbf{x}$  and  $\mathbf{y}$

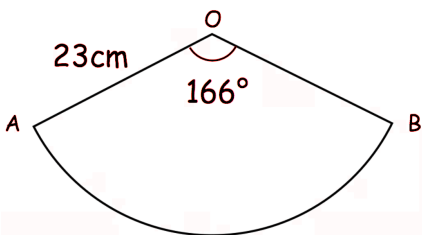
Solve the simultaneous equations

$$x^2 + y^2 = 13$$

$$x - 2y = 1$$



Find  $x$



Shown is sector OAB of circle centre O. OA and OB are joined to make a cone. Calculate the volume of the cone.