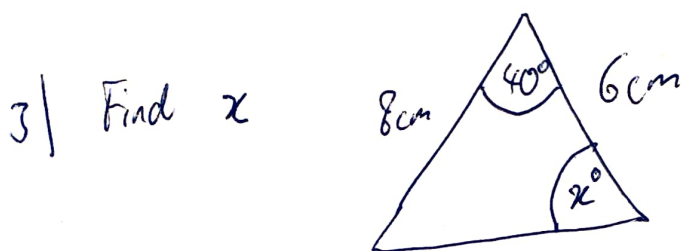
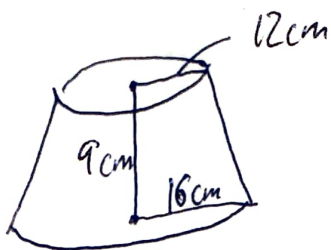


Lara HW 2/3/21 Additional questions for Tombridge 16+ A.

1) Simplify  $\frac{2 - \frac{3}{x}}{\frac{9}{x^2} - 4}$

2) Find the volume of the frustum to 3sf



4) Find the equation of the perpendicular bisector of AB where A is (6, 2) and B is (1, 9)

5) a)  $f(x) = x^3 - ax^2 + 4$  has a factor  $x+1$ . Find  $a$ .

b) Factorise  $f(x)$  fully and sketch  $y = f(x)$

c) Find (show working) the value of  $n$  such

that  $\frac{4 + \sqrt{32}}{2 - \sqrt{2}} = \sqrt{n} + \sqrt{n+8}$

d) i) Express  $2x^2 + x + 15$  in the form  $a(x+b)^2 + c$ .

Here sketch  $y = 2x^2 + x + 15$ .

ii) For what values of  $m$  is  $y = mx$  tangent to the curve in the above.