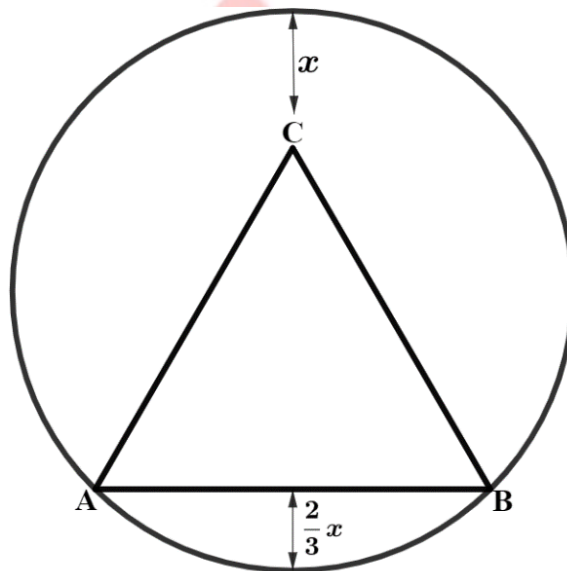


GCSE Mathematics (Grade 9-1)

Problem Solving – {Aimed at students working towards Grade 9 or 8} – (Sample 1)

1. Given that, $5 : x(x + 4) = 3 : 7$
Show that $3x^2 + 12x - 35 = 0$
2. If $(\sqrt{p} + \sqrt{5p})^2 = 10 + q\sqrt{5}$,
Show that $q = 3\frac{1}{3}$
3. The roots of a quadratic equation $y = f(x)$ are given as $x = \frac{-7 \pm \sqrt{49 - 24}}{6}$
The coordinate $(3, k)$ lies on $f(x)$.
Find the exact value of k
4. Given that, $10x^2 - 9xy + 2y^2 = 0$,
Find the possible values of x in terms of y
5. ABC is equilateral triangle of side 6 cm which is drawn inside a circle.



The area of the circle is $108\pi \text{ cm}^2$

The vertex C lies on the diameter of the circle.

Calculate the exact value of x