Name: _____ 5-a-day Further Maths

15th April

Corbettmaths

$$f(x) = \frac{4x+7}{9x+5}$$

Write down a value of x that can not be in the domain of f(x).

$9x + 5 \neq 0$

$9x = -5$

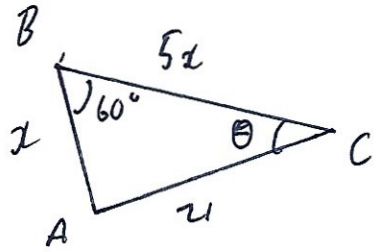
$x = -5/9$

Triangle ABC is such that

AB = x cm AC = 21cm BC = 5x cm

Angle ABC = 60°

Find angle ACB



$21^2 = x^2 + (5x)^2 - 2x(5x) \times \cos 60$ ↖ $\frac{1}{2}$

$441 = 26x^2 - 5x^2$

$441 = 21x^2$

$x^2 = 21$

$x = \sqrt{21}$

$\frac{\sin\theta}{\sqrt{21}} = \frac{\sin 60}{21}$

$\theta = 10.89°$

Work out the equation of the normal to the curve $y = (x+1)(x+7)$ at the point where $x = -2$

$y = x^2 + 8x + 7$

$\frac{dy}{dx} = 2x + 8$

when $x = -2$

$\frac{dy}{dx} = 4$ $y = -5$

$y = -\frac{1}{4}x + c$

$y = -\frac{1}{4}(-2) + c$

$-5 = \frac{1}{2} + c$

$c = -5.5$

$y = -\frac{1}{4}x - 5\frac{1}{2}$