5th March **Higher Plus 5-a-day**

Corbettmaths

A circle has the equation $x^2 + y^2 = 121$

Find the area of the circle.
Give your answer in terms of π

$r = 11$

$\pi \times 11^2$

$= 121\pi$

C is inversely proportional to the square of A.
Both A and C are positive.

$C \propto \frac{1}{A^2}$

When A = 3, C = 10.

$C = \frac{k}{A^2}$

Find the value of A when C = 5.

$10 = \frac{k}{9}$ $k = 90$ $C = \frac{90}{A^2}$

$5 = \frac{90}{A^2}$

$A^2 = 18$

$A = \sqrt{18} = 3\sqrt{2}$

Write $0.2\dot{5}\dot{3}$ as a fraction

$x = 0.253535...$

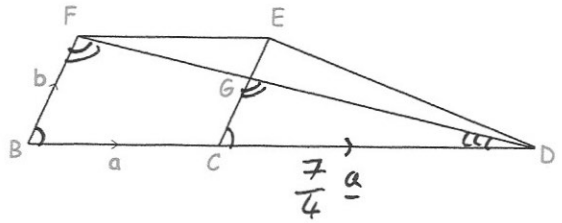
$10x = 2.53535...$

$1000x = 253.5353...$

$990x = 251$

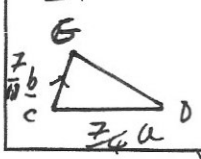
$x = \frac{251}{990}$

BCEF is a parallelogram.
The point C is a point on the line BCD such that BC : CD = 4 : 7
FD and CE meet at the point G.

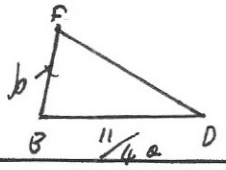


$\overrightarrow{BC} =$ **a** $\overrightarrow{BF} =$ **b**

COG



BOF



$\times \frac{11}{7}$

Work out $\overrightarrow{GD}$
in terms of **a** and **b**

Give your answer in its simplest form.

$\overrightarrow{GD} = \overrightarrow{GC} + \overrightarrow{CD}$

$= -\frac{7}{11}\underline{b} + \frac{7}{4}\underline{a}$

$= \frac{7}{4}\underline{a} - \frac{7}{11}\underline{b}$