Name: _____ 5-a-day Higher Plus

9th June

Corbettmaths

Show algebraically that

$0.9\dot{1}\dot{3}$

can be written as $\frac{452}{495}$

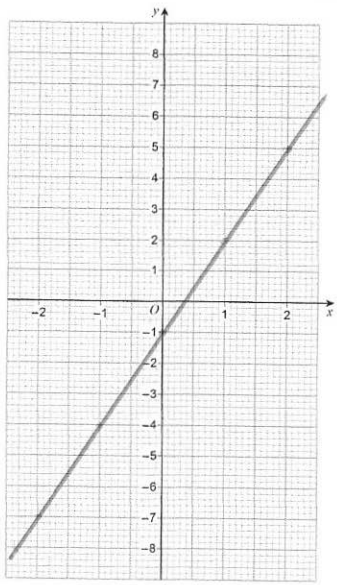
$x = 0.913131313...$

$10x = 9.131313...$

$1000x = 913.1313...$

$990x = 904$

$x = \frac{904}{990} = \frac{452}{495}$



$$f(x) = \frac{x+1}{3}$$

Draw

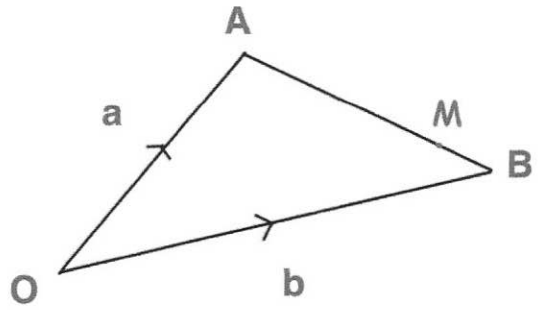
$$y = f^{-1}(x)$$

$y = \frac{x+1}{3}$

$3y = x + 1$

$x = 3y - 1$

$f^{-1}(x) = 3x - 1$



$\overrightarrow{AB} = -\underset{\sim}{a} + \underset{\sim}{b}$

$\overrightarrow{AM} = -\frac{5}{7}\underset{\sim}{a} + \frac{5}{7}\underset{\sim}{b}$

$\overrightarrow{MB} = -\frac{2}{7}\underset{\sim}{a} + \frac{2}{7}\underset{\sim}{b}$

OAB is a triangle.
M is a point on AB such that
AM : MB = 5 : 2

$\overrightarrow{OA} = \mathbf{a}$ $\overrightarrow{OB} = \mathbf{b}$

Express $\overrightarrow{MO}$ in terms of **a** and **b**

$\overrightarrow{MO} = \overrightarrow{MB} + \overrightarrow{BO}$

$\overrightarrow{MO} = -\frac{2}{7}\underset{\sim}{a} + \frac{2}{7}\underset{\sim}{b} - \underset{\sim}{b}$

$\overrightarrow{MO} = -\frac{2}{7}a - \frac{5}{7}\underset{\sim}{b}$