

11th December



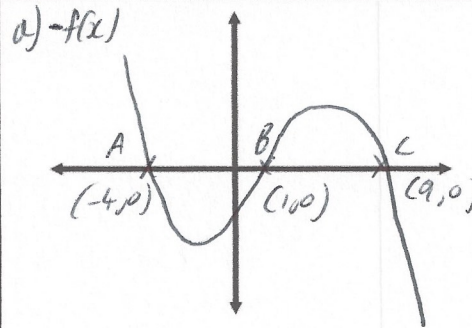
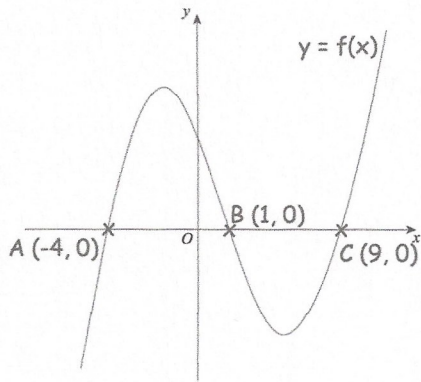
Corbettmaths

Express as a simplified fraction

$0.4\overline{52}$   
 $x = 0.4525252\dots$   
 $10x = 4.5252\dots$   
 $1000x = 452.525\dots$

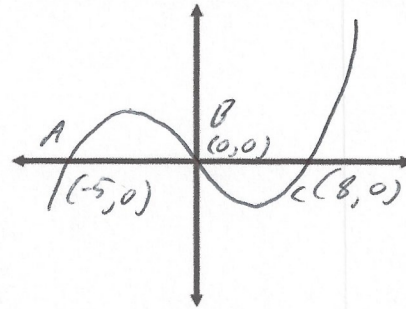
$990x = 448$   
 $x = \frac{224}{495}$

Shown is the graph  $y = f(x)$



Sketch

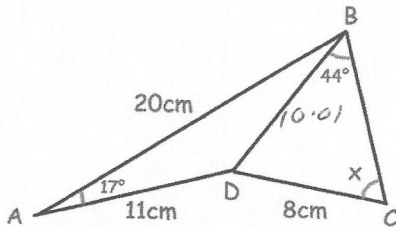
- (a)  $y = -f(x)$       (b)  $y = f(x + 1)$



A circle with centre  $(0, 0)$  has diameter 20. Find the equation of the tangent to the circle at the point  $(-8, -6)$ .

$r = 10$   
 $x^2 + y^2 = 10^2$

$y = -\frac{4}{3}x - \frac{50}{3}$



$BD^2 = 11^2 + 20^2 - 2 \times 11 \times 20 \times \cos 17$   
 $BD^2 = 100.225\dots$   
 $BD = 10.01$   
 $\frac{\sin x}{10.01} = \frac{\sin 44}{8}$        $x = 60.36^\circ$   
 $\sin x = 0.869\dots$