

11th June

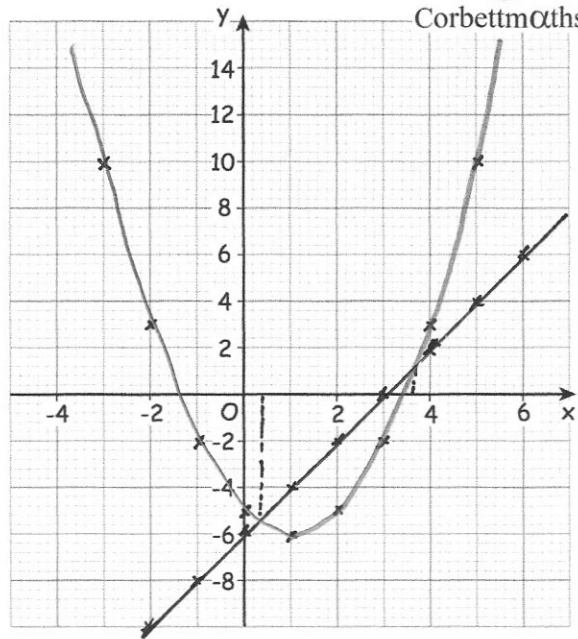
Higher Plus 5-a-day



Corbettmaths

Draw $y = x^2 - 2x - 5$

x	-3	-2	-1	0	1	2	3
y	10	3	-2	-5	-6	-5	-2
x	4	5					
y	3	10					



By drawing an appropriate linear graph, find the solutions of $x^2 - 4x + 1 = 0$

$y = x^2 - 2x - 5$
 (sub) $0 = x^2 - 4x + 1$ $x = 0.4$
 $y = 2x - 6$ or
 $x = 3.6$

$f(x) = \frac{3x}{5} + 1$

$y = \frac{3x}{5} + 1$

Find $f^{-1}(350)$

$y - 1 = \frac{3x}{5}$

$5y - 5 = 3x$
 $x = \frac{5y - 5}{3}$

$f^{-1}(x) = \frac{5x - 5}{3}$

$f^{-1}(350) = \frac{5(350) - 5}{3}$
 $= \frac{1750 - 5}{3}$
 $= 581.\bar{6}$

ACD is a triangle.

B is a point on AC

Work out the area of triangle ABD.

Give your answer correct to 3 significant figures.

$BD^2 = 8^2 + 6.7^2 - 2 \times 8 \times 6.7 \cos 75^\circ$

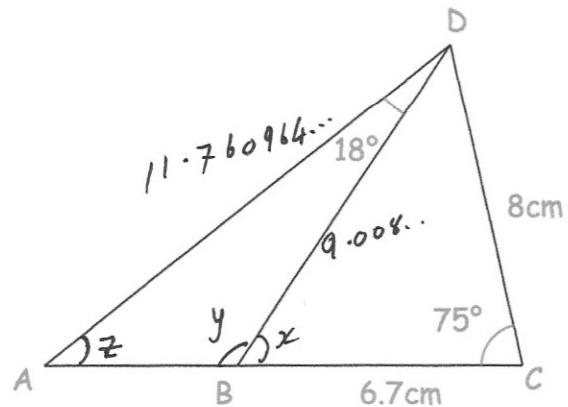
$BD = 9.008\dots$

$\frac{x}{8} = \frac{\sin 75^\circ}{9.008\dots}$

$x = 59.0744^\circ$

$y = 120.9256^\circ$

$z = 41.0744^\circ$



$\frac{AD}{\sin 120.9256} = \frac{9.008\dots}{\sin 41.0744}$
 $AD = 11.760964\dots$

$Area = \frac{1}{2} \times 9.008\dots \times 11.7609\dots \times \sin 18^\circ$

$= 16.37 \text{ cm}^2$