Name: _____ 5-a-day Further Maths

4th August

Corbettmaths

The lines $y = x - 7$ and $y = 4x - 19$ intersect at the point A.

The point B has coordinates $(-2, 11)$

At A $x - 7 = 4x - 19$

$12 = 3x$

$x = 4$ $A(4, -3)$

Find the equation of the line that passes through A and B.

$m = -\frac{14}{6} = -\frac{7}{3}$

$y - 11 = -\frac{7}{3}(x + 2)$

$y = -\frac{7}{3}x + \frac{19}{3}$

Find the distance between A and B.

$AB = \sqrt{6^2 + 14^2}$

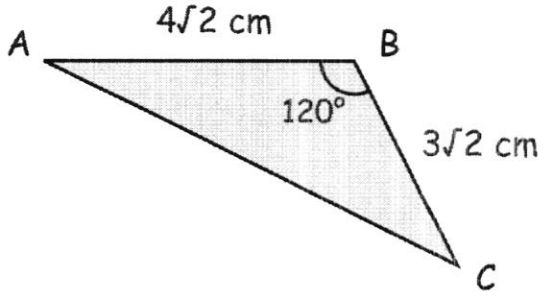
$= \sqrt{232}$ (15.23)

Solve $5sinx = 8cosx$ for

$0° \leq x \leq 360°$

$\tan x = \frac{8}{5}$

$x = 58.0°, 238.0°$



Calculate the length of AC.
(non-calculator)

$AC^2 = (4\sqrt{2})^2 + (3\sqrt{2})^2 - 2(4\sqrt{2})(3\sqrt{2})\cos 120°$

$= 32 + 18 - 48\cos 120°$

$= 50 + 24$

$AC = \sqrt{74}$

Prove that

$$\frac{sinx - sin^3x}{cos^3x} \equiv tanx$$

$LHS = \frac{\sin x(1 - \sin^2 x)}{\cos x \cdot \cos^2 x}$

$= \tan x$