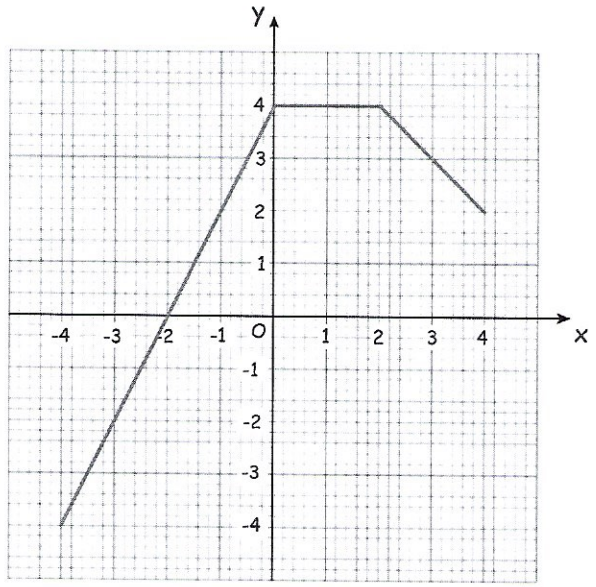
7th January

Corbettmaths



Define $f(x)$, stating clearly the domain for each part.

$f(x) = 2x + 4 \quad -4 \leq x < 0$

$= 4 \quad 0 \leq x < 2$

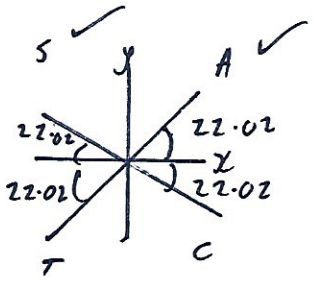
$= -x + 6 \quad 2 \leq x \leq 4$

Solve $8\sin\theta - 3 = 0$ for $0° \leq \theta \leq 360°$

$\sin\theta = \frac{3}{8}$

$\sin^{-1}\left(\frac{3}{8}\right) = 22.02°$

$\theta = 22.02, 157.98°$



Rationalise and simplify $\frac{17\sqrt{3} + 5\sqrt{5}}{2\sqrt{3} - \sqrt{5}}$

$\frac{17\sqrt{3} + 5\sqrt{5}}{2\sqrt{3} - \sqrt{5}} \times \frac{(2\sqrt{3} + \sqrt{5})}{(2\sqrt{3} + \sqrt{5})}$

$= \frac{102 + 17\sqrt{15} + 10\sqrt{15} + 25}{12 - 5}$

$= \frac{127 + 27\sqrt{15}}{7}$

Prove $\tan\theta\cos\theta \equiv \sin\theta$

LHS $\frac{\sin\theta}{\cos\theta} \times \frac{\cos\theta}{1}$

$= \sin\theta$ QED