

27th October 2020 1901571 15:43

6

i. $5(2x+1) = 4(3x+2)$

$10x+5 = 12x+8$

$-3 = 2x$

$x = -\frac{3}{2} \text{ or } -1.5$

ii. $12x+5 = 4x-1$

$8x = -6$

$x = -\frac{6}{8}$

$x = -\frac{1}{4} \text{ or } -0.25$

iii. $\frac{(4x-1)}{3} = \frac{(5x+2)}{2}$

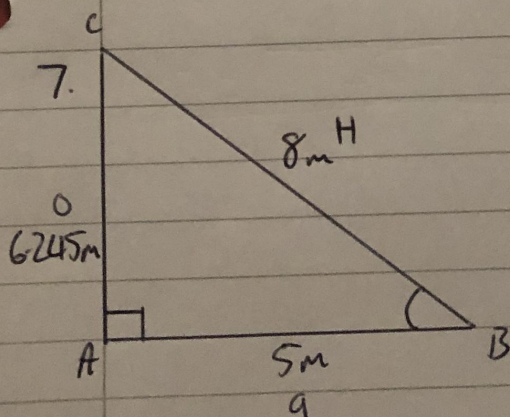
$8 \cdot 2 \cdot \frac{(4x-1)}{3} = 2 \cdot 3 \cdot \frac{(5x+2)}{2}$

$2(4x-1) = 3(5x+2)$

$8x-2 = 15x+6$

$-8 = 7x$

$x = -\frac{8}{7} \text{ or } -1.14$



i. Angle B

$\frac{C}{H} = \cos \theta = \frac{5}{8}$

$\theta = \cos^{-1}\left(\frac{5}{8}\right)$

$\theta = 51.32^\circ$

ii. Angle C

$C = 180 - 90 - 51.32$

$C = 38.68^\circ$

iii. Length AC

$(BC)^2 = AC^2 + AB^2$

$AC^2 = \sqrt{BC^2 - AB^2}$

$AC = \sqrt{64 - 25}$

$AC = 6.245m$