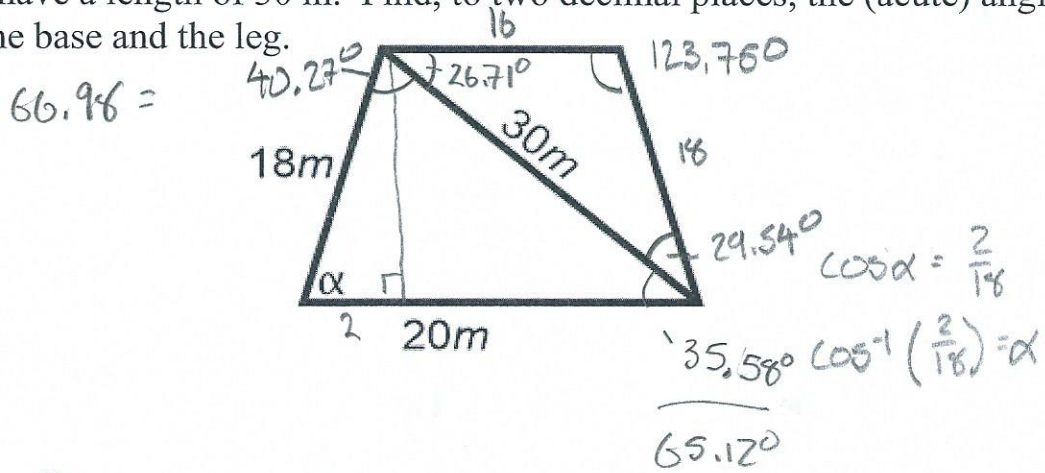


- C) An isosceles trapezoid has a base of length 20 m and a leg of length 18 m, and its diagonals have a length of 30 m. Find, to two decimal places, the (acute) angle between the base and the leg.



$$30^2 = 18^2 + 20^2 - 2 \cdot 18 \cdot 20 \cdot \cos \alpha$$

$$\frac{30^2 - 18^2 - 20^2}{-2 \cdot 18 \cdot 20} = \cos \alpha$$

$$\cos^{-1}\left(\frac{30^2 - 18^2 - 20^2}{-2 \cdot 18 \cdot 20}\right) = \alpha = 104.15 \quad \text{should be } 56.25^\circ$$

I don't think this shape really exists