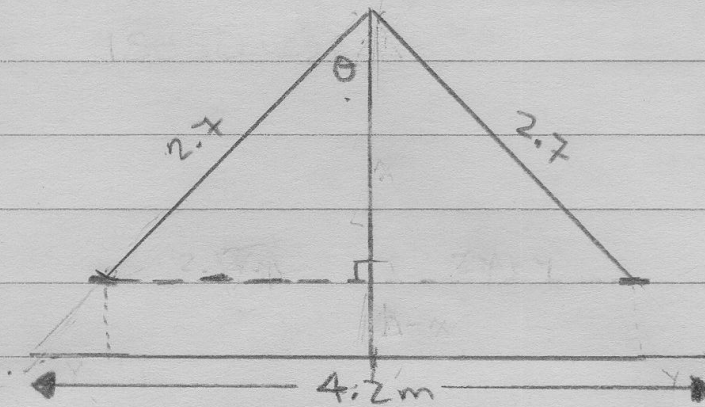


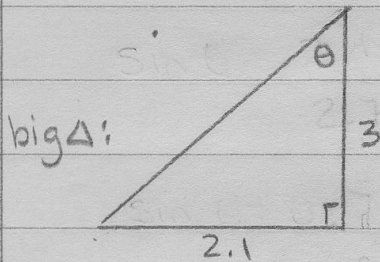
- p.282 #11** A tree branch 3 m above ground runs parallel to Noel's garage and his neighbour's. Noel wants to attach a rope swing on this branch. The garages are 4.2 m apart and the rope is 2.7 m long.
- a) What is the maximum angle, measured from the perpendicular, through which the rope can swing? Round your answer to the nearest degree.
- b) What is the maximum height above ground, to the nearest tenth of a metre, of the end of the rope?

# 11,



Isosceles  $\Delta$ , so branch bisects 4.2.

a)

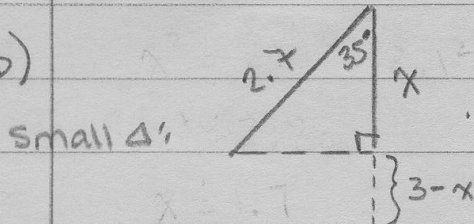


$$\tan \theta = \frac{2.1}{3}$$

$$\tan \theta = 0.7$$

$$\theta = 35^\circ$$

b)



$$\cos 35 = \frac{x}{2.7}$$

$$x = 2.7 \cos 35$$

$$x = 2.2$$

$$\begin{aligned} \text{height above ground} &= 3 - 2.2 \\ &= 0.8 \text{ m} \end{aligned}$$