7. let $a = 35\,cm$, $b = 54\,cm$, $c = 61\,cm$

$$s = \frac{a+b+c}{2}$$

$$= \frac{35+54+61}{2}$$

$$= \frac{150}{2}$$

$$= 75\,cm$$

$$\text{area of } \Delta = \sqrt{s(s-a)(s-b)(s-c)}$$

$$= \sqrt{75(75-35)(75-54)(75-61)}$$

$$= \sqrt{75 \times 40 \times 21 \times 14}$$

$$= \sqrt{3 \times 5^2 \times 2 \times 2^2 \times 5 \times 3 \times 7 \times 7 \times 2}$$

$$= 2 \times 2 \times 3 \times 5 \times 7\sqrt{5}$$

$$= 420\sqrt{5}\ cm^2$$

$$\text{area of } \Delta = 420\sqrt{5}$$

$$\frac{1}{2} \times \text{Smallest Side} \times \text{al.} = 420\sqrt{5}$$

$$\frac{1}{2} \times 35 \times \text{al} = 420\sqrt{5}$$

$$\Rightarrow \text{al.} = \frac{\overset{12}{\cancel{420}}\sqrt{5} \times 2}{\cancel{35}}$$

$$= 24\sqrt{5}$$

$\therefore$ longest altitude $= 24\sqrt{5}\ cm$