4. The perimeter of the base of square pyramid is 40 centimetres and the total length of all its edges is 92 centimetres. Calculate its surface area.

Perimeter of the base = 40 cm

One side of the base $= \frac{40}{4} = 10$ cm

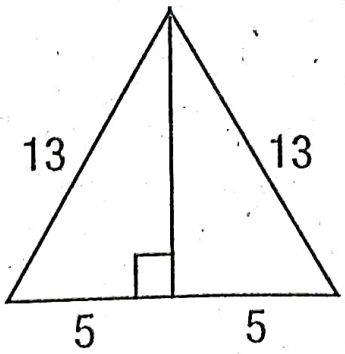
Base area $= 10 \times 10 = 100$ sq.cm.

Total length of all the edges
$= 92$ cm

Total length of the base edges
$= 40$ cm

Total length of the four lateral edges $= 92 - 40 = 52$ cm

Length of one lateral edge
$= \frac{52}{4} = 13$ cm



Height of the triangle $= \sqrt{13^2 - 5^2}$

$= \sqrt{169 - 25} = \sqrt{144} = 12$ cm

Area of 4 lateral faces

$= 4 \times \frac{1}{2} \times 10 \times 12 = 240$ sq.cm.

Total surface area $= 100 + 240$
$= 340$ sq.cm.