



20. It takes two weeks to clean the 3312 panes of glass in the 6000m^2 glass roof of the British Museum, a task performed once every two years. Assuming that all the panes are equilateral triangles of the same size, roughly how long is the side of each pane?
- A 50 cm B 1 m C 2 m D 3 m E 4 m

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20. C Let the length in metres of the side of a pane be x . Then the area of one pane = $\frac{1}{2} \times x \times x \times \sin 60^\circ = \frac{\sqrt{3}}{4}x^2$. So

$$\frac{\sqrt{3}}{4}x^2 \approx \frac{6000}{3300}, \text{ that is } x^2 \approx \frac{4 \times 6000}{\sqrt{3} \times 3300}.$$

We conclude that $x^2 \approx \frac{7}{\sqrt{3}} \approx 4$.

