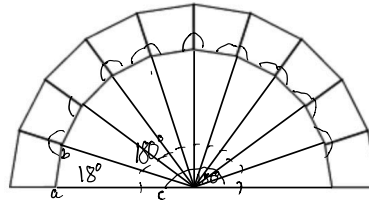


Trapezium Arch

Stage: 3 Short ★★★

See all short problems arranged by curriculum topic in the [short problems collection](#)

Ten stones, of identical shape and size, are used to make an arch, as shown in the diagram. Each stone has a cross-section in the shape of a trapezium with equal sides. What is the size of the smallest angles of the trapezium?

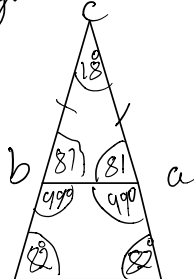
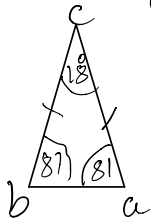


$$180 \div 10 = 18$$

$\triangle ABC$ is isosceles

$$\frac{180 - 18}{2} = 81^\circ$$

a straight line is $180^\circ \therefore 180 - 81 = 99$



$$99 \times 2 = 196$$

$$\frac{360 - 196}{2} = \underline{\underline{82^\circ}}$$