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Efficient Cutting

A cylindrical container can be made by using two circles for the ends and a rectangle which wraps round to form the body.

To make cylinders of varying sizes, the three pieces can be cut from a single rectangle of flat sheet in several ways. For example:



Use a single sheet of A4 paper and make a cylinder with the greatest possible volume.

The cylinder must be closed off by a circle at each end.

What are its dimensions?*

*[assume an A4 sheet of paper is
21cm by 29.6 cm]

Thousands more problems can be found on
the NRICH Maths website:

www.nrich.maths.org