



Free-Standing Mathematics Qualification
Higher Level

Shape and Space

4985/PM

Preliminary Material

Data Sheet

Specimen Data Sheet

To be opened and issued to candidates one to three weeks prior to the examination

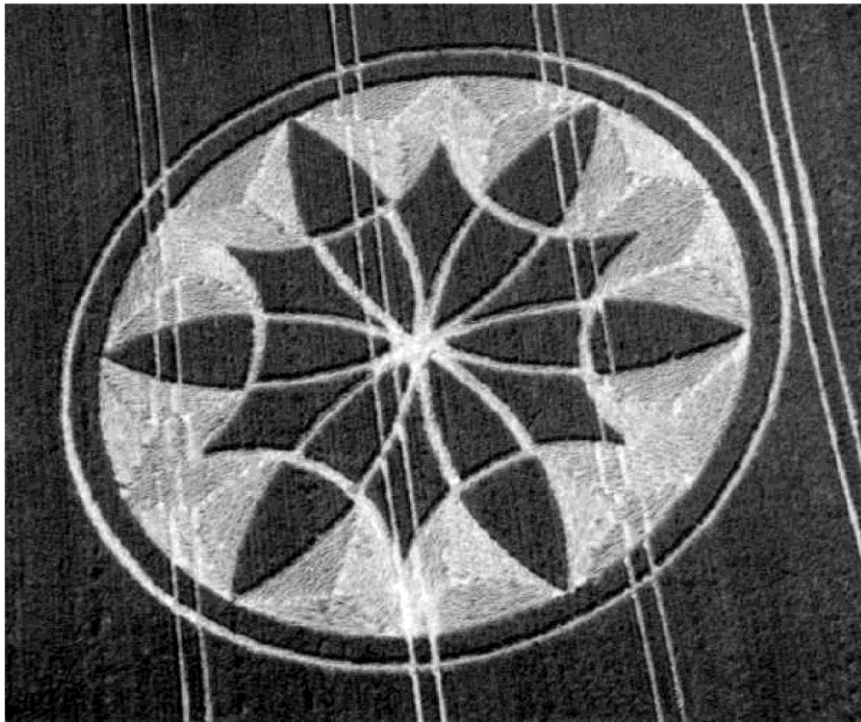
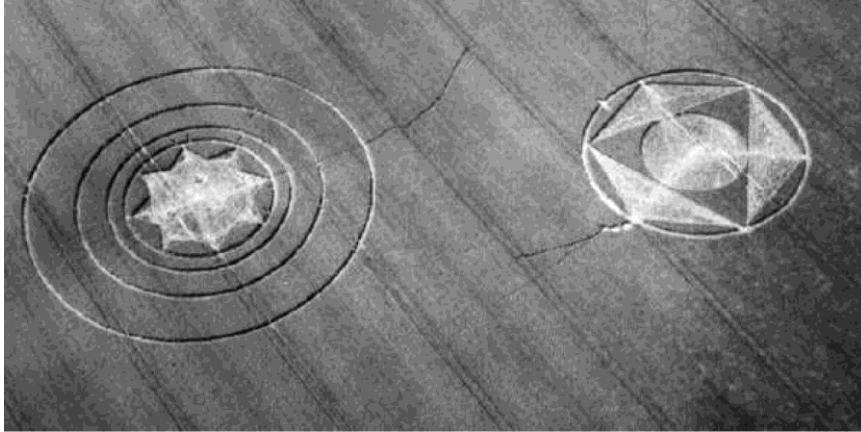
REMINDER TO CANDIDATES

YOU MUST **NOT** BRING THIS DATA SHEET
WITH YOU WHEN YOU SIT THE EXAMINATION.
A CLEAN COPY WILL BE MADE AVAILABLE.

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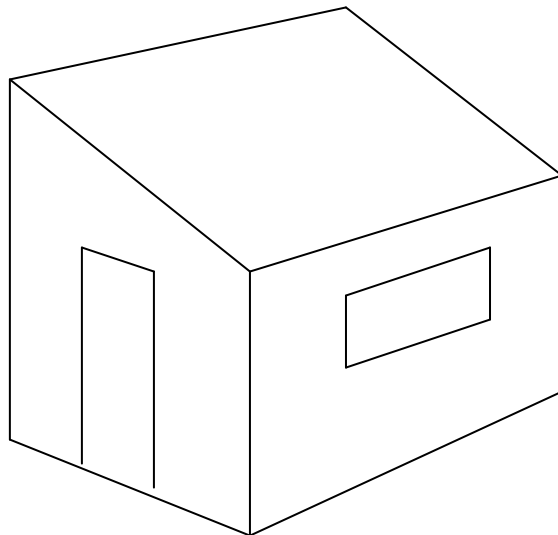
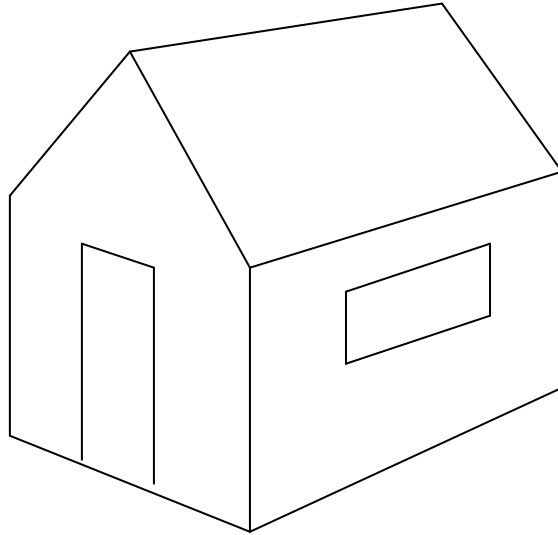
Crop Circles

In the film 'Signs', Mel Gibson plays an American farmer who discovers mysterious patterns in his cornfields. Crop circles have appeared in English cornfields in recent years. Aerial photographs of three of these crop circles are shown below.



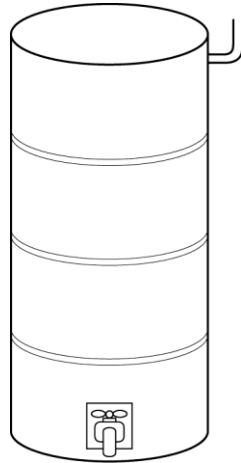
Garden Shed

Simon and Alice want a garden shed. They find that many garden centres sell sheds in two basic designs.



Water Butt

Brian has a large cylindrical water butt to collect rain water for watering the garden. Brian uses the water in the water butt to fill a hemispherical pond, and uses cylindrical watering cans to water the garden.



Volume of a cylinder, radius r and height h , is $\pi r^2 h$.

Curved surface area of a cylinder, radius r and height h , is $2\pi rh$.

Volume of a hemisphere is $\frac{2}{3}\pi r^3$.

Curved surface area of a hemisphere is $2\pi r^2$

END OF DATA SHEET

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