

Free-Standing Mathematics Qualification  
June 2007  
Advanced Level



**WORKING WITH ALGEBRAIC AND  
GRAPHICAL TECHNIQUES**  
Unit 11

**6991/2PM**

**PRELIMINARY MATERIAL**

**DATA SHEET**

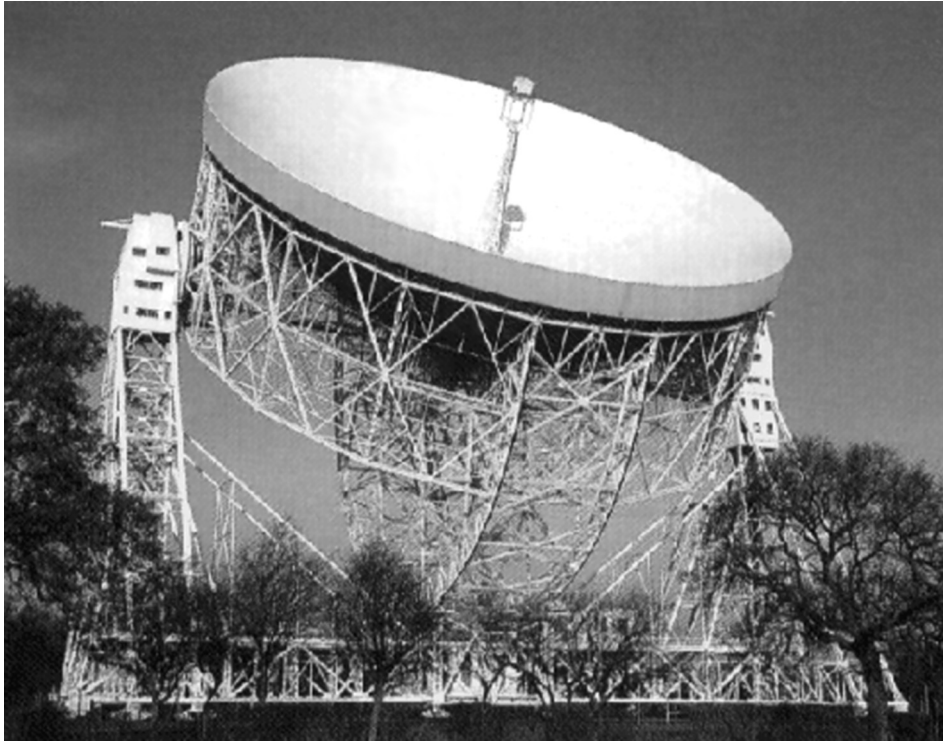
**To be issued to candidates between Wednesday 2 May  
and Wednesday 9 May 2007**

**REMINDER TO CANDIDATES**

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

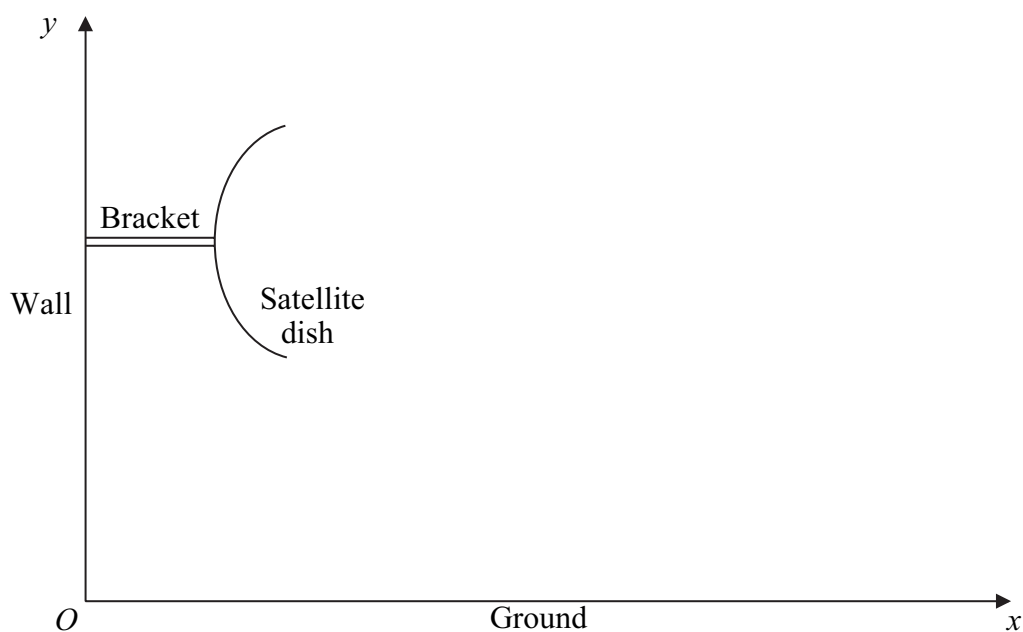
**Receivers**

The Lovell telescope at Jodrell Bank is used to receive radio waves from the universe. It can move in three dimensions.



The diameter of the bowl is 76 metres.  
The height of the axis of rotation of the bowl is 50 metres.

A TV satellite dish is fastened to a wall using a bracket.



**Height**

The average heights of boys aged 0 to 20 years were recorded.

<b>Age (years)</b>	0	2	4	6	8	10	12	14	16	18	20
<b>Height (cm)</b>	56	86	100	115	127	137	147	159	169	176	178

**Population**

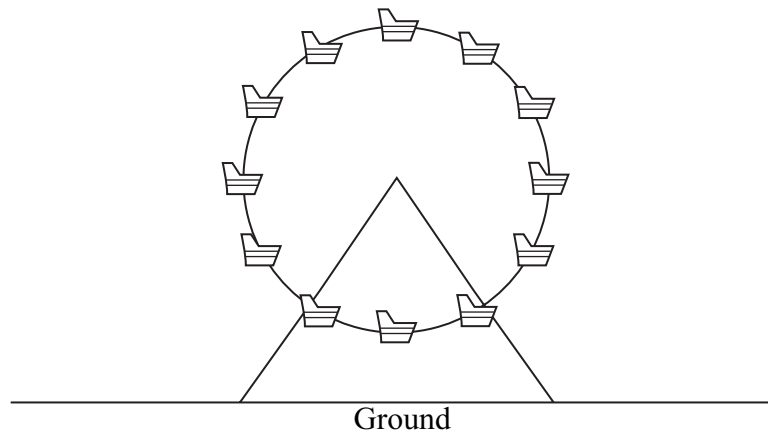
Every ten years a census is taken to estimate the population of England and Wales.

The results for some years are shown.

<b>Year</b>	1911	1921	1931	1951	1961	1971	1991	2001
<b>Population (millions)</b>	36.1	37.9	39.9	43.7	46.1	48.7	49.9	52.0

**Fairground**

A fairground ride consists of seats fastened onto a big wheel.



**END OF DATA SHEET**

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Lovell telescope: I. Morison, Jodrell Bank Observatory.

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