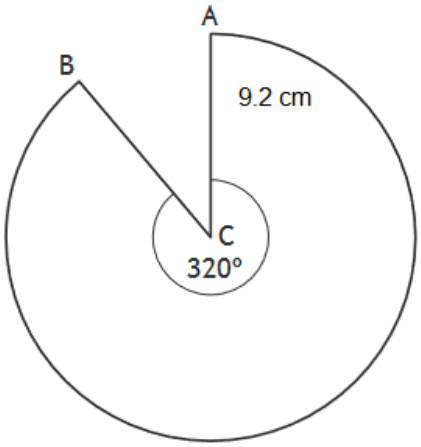
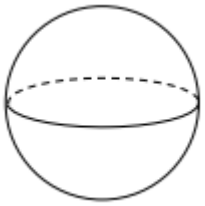
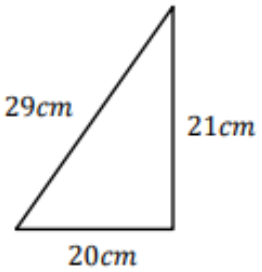
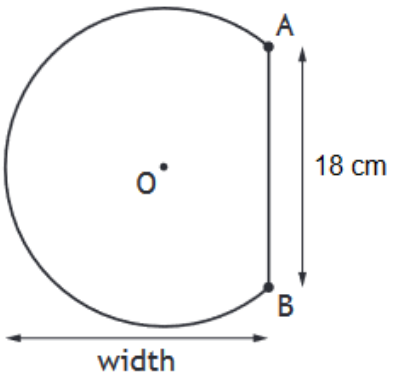
A2	Calculator Paper	
1	The population of a city is steadily increasing by 4.9% per year. In 2021 the population was approximately 3 million. What will the population be in 2024. Give your answer rounded to **2 significant figures.**	**4**
2	The diagram shows a sector of a circle with centre C. The radius of the circle is 9.2 centimetres and the centre angle BCA is $320°$. Calculate the length of the arc AB. 	**3**
3	Factorise $5x^2 - 7x - 6$	**2**
4	Find the equation of the line passing through the points $(2, -1)$ and $(12,4)$. Give your equation in its simplest form.	**3**
5	A youtube video receives the following number of streams over a 5 day period. $543 \quad 250 \quad 441 \quad 339 \quad 532$ Calculate the mean and standard deviation for this data.	4
6	Solve algebraically, the inequality $3(5 - x) > 21$	**2**
7	An energy company charged a late payment fee of 3.5% on an electricity bill. The total bill came to £269.10. How much would have been due if the bill was paid on time?	**3**
8	Solve the quadratic equation $5x^2 + 6x - 1 = 0$ Give your answers **correct to 1 decimal place**.	**3**

9	This sphere has a volume of $250\ cm^3$. Calculate the length of the radius. 	**3**
10	Determine whether the triangle in the diagram is a right-angled triangle. **Justify your answer.**  	**3**
11	Express $\frac{2}{n} - \frac{1}{n-2},\ n \neq 0,\ n \neq 2$ As a single fraction in its simplest form.	**3**
12	This shape is part of a circle with a centre O. The circle has a radius of 15 centimetres. The line AB is a chord of the circle and is 18 centimetres. Calculate the width of the shape.  	**4**
	37 marks	