

Solutions to App “Audio Sky Tours”, Episode 2

The Spring Constellations

	Solution	Points
1	In chart: Great Bear, Little Bear.	2
2	In chart: the Herdsman, the Virgin, the Lion.	3
3	In chart: the Crab, the Twins.	2
4	The bow of the Big Dipper's handle takes you to Arcturus and on to Spica. Extending both sides of the Dipper downwards, the two straight lines will meet in the constellation Lion.	2
5	Possibilities: Pole Star, the Sun's position at noon, compass, GPS.	1
6	Planets shine steady, no scintillation.	1
7	Venus, Mercury.	2
8	The Lion, the Crab, the Sea Serpent (Hydra).	3
9	The light year. It's the distance travelled by the light in one year. <i>Correct: in vacuum, during one Julian year, i.e. in 365.25 days.</i>	2
10	<p>Distance Sun-Earth: $s = v \cdot t = 300,000 \frac{\text{km}}{\text{s}} \cdot 500\text{s} = \underline{150 \cdot 10^6 \text{km}}$</p> <p>Distance Earth-Regulus:</p> $s = v \cdot t = 300,000 \frac{\text{km}}{\text{s}} \cdot 3600\text{s} \cdot 24 \cdot 365,25 \cdot 80 = 7.57366 \cdot 10^{14} \text{km}$ <p>Useful accuracy: $\underline{7.57 \cdot 10^{14} \text{km}}$</p>	2

20