Practice worksheet | Further trigonometry

Periodic modelling

Name: _____ Date: _____

6 questions | 12 marks

1. A model has maximum $28\,^\circ\text{C}$ and minimum $16\,^\circ\text{C}$. Find amplitude and midline. [2 marks]

2. A wheel has radius 8 m, axle 10 m above ground and period 40 s. It starts at the bottom. Give a height rule. [2 marks]

3. For that wheel, find the height after 10 s. [2 marks]

4. For that wheel, find every time at height 14 m on $[0, 40)$. [2 marks]

5. Why is $\cos(2\pi t/12)$ inappropriate for a 365-day daylight cycle when t is in days? [2 marks]

6. Give two limitations of modelling a tide with a fixed sine wave. [2 marks]