Practice worksheet | Further trigonometry

# Periodic modelling

Name: _____ Date: _____

6 questions | 12 marks

**1.** A model has maximum $28\,^\circ$C and minimum $16\,^\circ$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 $\cos(\frac{2\pi t}{12})$ 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]