

1 For each of the following state:

i the period **ii** the amplitude

a $3 \cos \theta$ **b** $5 \cos (2\theta)$

c $\frac{1}{2} \cos (3\theta)$ **d** $5 \sin \left(\frac{\theta}{2} \right)$

e $-2 \sin (2\theta)$ **f** $-\frac{1}{4} \sin (5\theta)$

g $-3 \sin \theta$ **h** $2 \sin \left(\frac{\theta}{3} \right)$

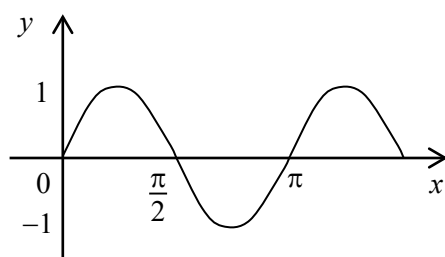
2 Write down the period of each of the following:

a $\sin (2\pi t)$ **b** $\sin \left(\frac{\pi \theta}{2} \right)$

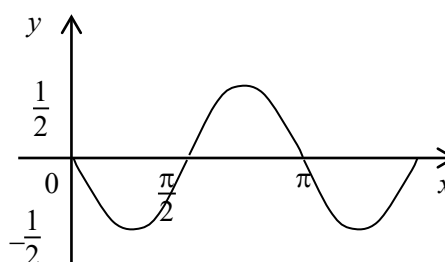
c $\cos (4\pi t)$ **d** $\cos \left(\frac{2\pi t}{3} \right)$

3 State the period and amplitude of each of the following trigonometric graphs:

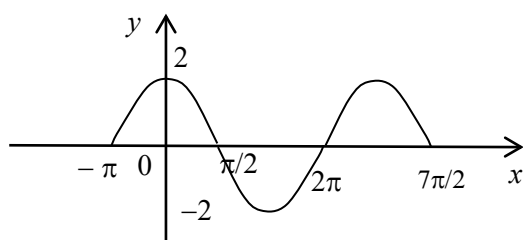
a



b



c



4 Sketch the graphs of each of the following, showing one cycle. List the axis intercepts for the graph for each interval:

a $y = \cos \theta$ **b** $y = \sin \theta$

c $y = -\cos \theta$ **d** $y = 2 \sin \theta$

e $y = \frac{1}{2} \cos (3\theta)$ **f** $y = -\frac{1}{4} \sin (5\theta)$

g $y = 5 \cos \left(\frac{\pi \theta}{2} \right)$ **h** $y = \sin \left(\frac{\theta}{3} \right)$

Answers

- 1**
- | | | | | |
|----------|----------|------------------|-----------|---------------|
| a | i | 2π | ii | 3 |
| b | i | π | ii | 5 |
| c | i | $\frac{2\pi}{3}$ | ii | $\frac{1}{2}$ |
| d | i | 4π | ii | 5 |
| e | i | π | ii | 2 |
| f | i | $\frac{2\pi}{5}$ | ii | $\frac{1}{4}$ |
| g | i | 2π | ii | 3 |
| h | i | 6π | ii | 2 |

- 2**
- | | | | | | | | |
|----------|---|----------|---|----------|---------------|----------|---|
| a | 1 | b | 4 | c | $\frac{1}{2}$ | d | 3 |
|----------|---|----------|---|----------|---------------|----------|---|

- 3**
- a** Period = π , amplitude = 1
- b** Period = π , amplitude = $\frac{1}{2}$
- c** Period = 3π , amplitude = 2

- 4** Check answers using desmos