

1 Suppose that  $\sin \theta = 0.2$ .

a What is  $\sin(-\theta)$ ?

Since the sine function is odd,

$$\sin(-\theta) = -\sin \theta = -0.2.$$

b What is  $\sin(\theta + 2\pi)$ ?

Since the period of the sine function is  $2\pi$ ,

$$\sin(\theta + 2\pi) = \sin \theta = 0.2.$$

2 Consider the function

$$f(x) = -\frac{1}{2} \cos \frac{3}{2}x.$$

a What is the period of this function? (Show what numerical calculation you make or what equation you solve, or draw a graph of the function that shows your answer.)

The period is

$$\frac{2\pi}{3/2} = \frac{4\pi}{3}.$$

b **Extra credit:** What is the amplitude of this function?

The amplitude is

$$\left| -\frac{1}{2} \right| = \frac{1}{2}.$$