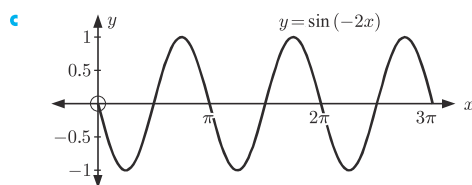
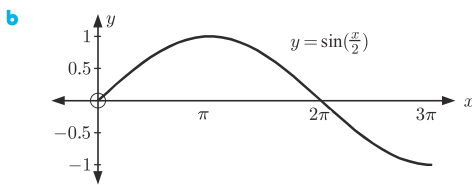
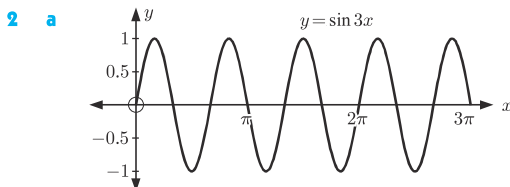
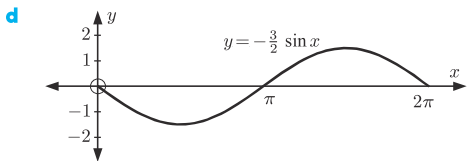
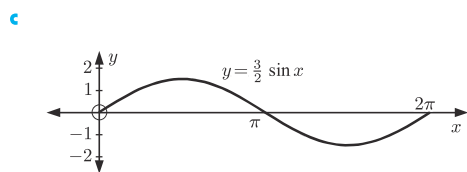
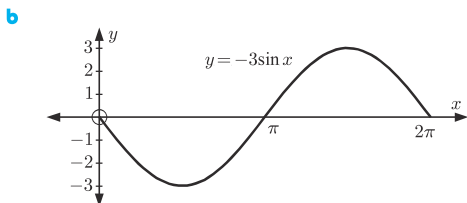
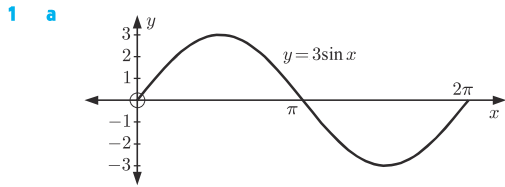
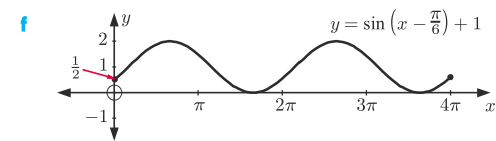
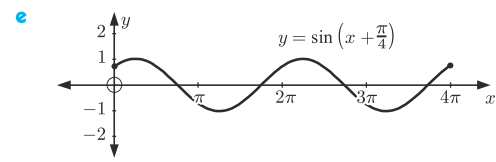
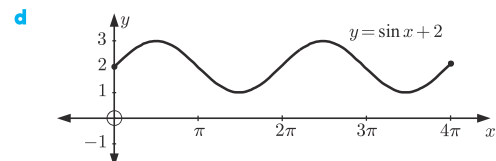
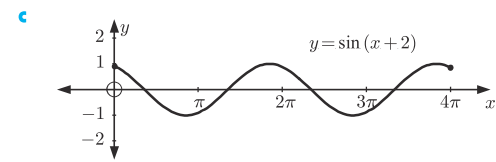
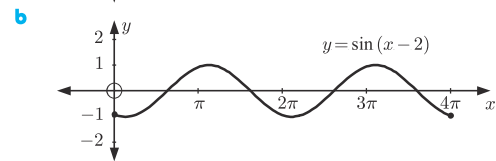
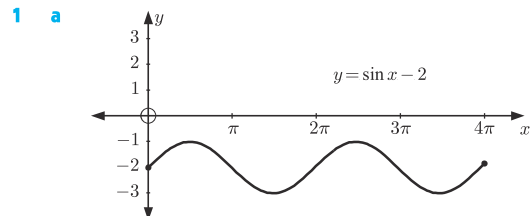


**EXERCISE 10B.1**



- 3 a**  $\frac{\pi}{2}$     **b**  $\frac{\pi}{2}$     **c**  $6\pi$     **d**  $\frac{10\pi}{3}$   
**4 a**  $b = \frac{2}{5}$     **b**  $b = 3$     **c**  $b = \frac{1}{6}$     **d**  $b = \frac{\pi}{2}$     **e**  $b = \frac{\pi}{50}$

**EXERCISE 10B.2**



- 2 a**  $\frac{2\pi}{5}$     **b**  $8\pi$     **c**  $\pi$     **3 a**  $\frac{2}{3}$     **b** 20    **c**  $\frac{1}{50}$     **d**  $\frac{\pi}{25}$   
**4 a** vert. translation  $-1$     **b** horiz. translation  $\frac{\pi}{4}$  right  
**c** vert. stretch, factor 2    **d** horiz. stretch, factor  $\frac{1}{4}$   
**e** vert. stretch, factor  $\frac{1}{2}$     **f** horiz. stretch, factor 4  
**g** reflection in the  $x$ -axis    **h** translation  $\begin{pmatrix} -2 \\ -3 \end{pmatrix}$   
**i** vert. stretch, factor 2, followed by a horiz. stretch, factor  $\frac{1}{3}$   
**j** translation  $\begin{pmatrix} \frac{\pi}{3} \\ 2 \end{pmatrix}$

**EXERCISE 10C**

- 1 a**  $T \approx 6.5 \sin \frac{\pi}{6}(t - 4.5) + 20.5$   
**2 a**  $T \approx 4.5 \sin \frac{\pi}{6}(t - 10.5) + 11.5$   
**3 a**  $T \approx 9.5 \sin \frac{\pi}{6}(t - 10.5) - 9.5$   
**b** A reasonable fit but not perfect.  
**4 a**  $H \approx 7 \sin 0.507(t - 3.1)$