Exercise 10A: Solutions

1 a $720^\circ = \dfrac{720 \times \pi}{180}$
$= 4\pi$

b $540^\circ = \dfrac{540 \times \pi}{180}$
$= 3\pi$

c $-450^\circ = -\dfrac{450 \times \pi}{180}$
$= -\dfrac{5\pi}{2}$

d $15^\circ = \dfrac{15 \times \pi}{180}$
$= \dfrac{\pi}{12}$

e $-10^\circ = \dfrac{-10 \times \pi}{180}$
$= -\dfrac{\pi}{18}$

f $-315^\circ = \dfrac{315 \times \pi}{180}$
$= -\dfrac{7\pi}{4}$

2 a $\dfrac{5\pi}{4} = \dfrac{5\pi \times 180}{4 \times \pi}$
$= 225^\circ$

b $-\dfrac{2\pi}{3} = \dfrac{2\pi \times 180}{3 \times \pi}$
$= -120^\circ$

c $\dfrac{7\pi}{12} = \dfrac{7\pi \times 180}{12 \times \pi}$
$= 105^\circ$

d $-\dfrac{11\pi}{6} = \dfrac{11\pi \times 180}{6 \times \pi}$
$= -330^\circ$

e $\dfrac{13\pi}{9} = \dfrac{13\pi \times 180}{9 \times \pi}$
$= 260^\circ$

f $-\dfrac{11\pi}{12} = \dfrac{11\pi \times 180}{12 \times \pi}$
$= -165^\circ$

3 a $\cos\left(\dfrac{3\pi}{2}\right) = 0$

b $\sin\left(-\dfrac{\pi}{2}\right) = -1$

c $\cos(6\pi) = 1$

d $\sin\left(\dfrac{15\pi}{2}\right) = -1$

4 a $\sin(270^\circ) = -1$

b $\cos(-540^\circ) = -1$

c $\sin(450^\circ) = 1$

d $\cos(720^\circ) = 0$