

Mid-unit Review Solutions

Part 1: 1a) 55° 1b) 235° 1c) $235^\circ, 305^\circ$ 1d) $55^\circ, 305^\circ$

2a) 0.6018 2b) -0.7986

3) $\sin \theta = -0.9165$ $\cos \theta = -0.4$

4) $(\frac{\sqrt{3}}{2}, \frac{1}{2})$ 5) $(-\frac{1}{2}, -\frac{\sqrt{3}}{2})$ 6) $(-\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2})$

7) $(0.7660, -0.6428)$

8) $\sin 220^\circ < \sin 180^\circ < \sin 140^\circ < \sin 60^\circ < \sin 100^\circ$

9) $\cos 350^\circ > \cos 70^\circ > \cos 280^\circ > \cos 140^\circ > \cos 210^\circ$

10) $(\cos(-435^\circ), \sin(-435^\circ))$

Part 2: 1) $R(7\cos 117^\circ, 7\sin 117^\circ)$ 2) $S(1, \sqrt{3})$

3) $T(5\sqrt{2}, -5\sqrt{2})$ 4) $W(0, -0.75)$

5) $\sin \theta = \frac{12}{13}$, $\cos \theta = \frac{5}{13}$

6) $\sin \theta = -\frac{7}{25}$, $\cos \theta = \frac{24}{25}$

7) $\sin \theta = \frac{\sqrt{3}}{2}$, $\cos \theta = -\frac{1}{2}$, $\theta = 120^\circ$

8) $\sin \theta = \frac{2\sqrt{5}}{5}$, $\cos \theta = \frac{\sqrt{5}}{5}$ 9) $\sin \theta = \frac{5\sqrt{34}}{34}$, $\cos \theta = \frac{-3\sqrt{34}}{34}$

10) $\sin \theta = -\frac{3\sqrt{13}}{13}$, $\cos \theta = -\frac{2\sqrt{13}}{13}$

Part 3: 1) $\theta = 28.07^\circ$ 2) 127.87° 3) 110.56°

4) $\theta = 319.40^\circ$ 5) 180°

Part 4: 1) $r=9$, $\theta = 225^\circ$ $(-\frac{9\sqrt{2}}{2}, -\frac{9\sqrt{2}}{2})$

2) $r=2$ $\theta = 210^\circ$ $(-\sqrt{3}, -1)$

3) $r=4$ $\theta = 310^\circ$ $(2.57, -3.06)$

4) $r=5\sqrt{2}$ $\theta = 105^\circ$ $(-1.83, 6.83)$

5) $r=25$ $\theta = 204.26^\circ$ $(-22.79, -10.27)$

Part 5: 1) 45° 2) $\frac{\pi}{6}$ 3) $\frac{\pi}{2}$ 4) 120°
 5) 315° 6) 150° 7) $\frac{4\pi}{3}$ 8) $\frac{11\pi}{6}$
 9) $\frac{3\pi}{2}$ 10) 36° 11) 75° 12) $\frac{10\pi}{9}$

Part 6: a) $\cos(30^\circ) = \frac{\sqrt{3}}{2}$ b) $\sin(300^\circ) = -\frac{\sqrt{3}}{2}$
 c) $\sin(135^\circ) = \frac{\sqrt{2}}{2}$ f) $\cos(225^\circ) = -\frac{\sqrt{2}}{2}$
 d) $\cos(\frac{\pi}{2}) = 0$ g) $\sin(210^\circ) = -\frac{1}{2}$
 e) $\sin(\pi) = 0$ h) $\cos(360^\circ) = 1$

2) $(\frac{1}{2}, \frac{\sqrt{3}}{2})$ 3) $(\frac{\sqrt{3}}{2}, -\frac{1}{2})$

4) $(\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2})$ 5) $(-0.416, 0.909)$

6) $(-3.27, -3.78)$

