



Foundation Algebra for Physical & Engineering (CELEN036)

Answers to Homework 2

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|---|---|---|
| 1. (i) $\frac{1}{3}\pi, \frac{5}{3}\pi$ | (ii) $\frac{5}{6}\pi, \frac{11}{6}\pi$ | (iii) $\frac{1}{4}\pi, \frac{3}{4}\pi$ |
| (iv) $109.5^\circ, 250.5^\circ$ | (v) $26.6^\circ, 206.6^\circ$ | (vi) $14.5^\circ, 165.5^\circ$ |
| (vii) $32.9^\circ, 327.1^\circ$ | (viii) $203.6^\circ, 336.4^\circ$ | (ix) $36.9^\circ, 216.9^\circ$ |
| (x) $0, \pi, 2\pi, \frac{1}{6}\pi, \frac{11}{6}\pi$ | (xi) $0, \pi, 2\pi, \frac{2}{3}\pi, \frac{4}{3}\pi$ | |
| 2. (i) $\pm 57.7^\circ, \pm 122.3^\circ$ | (ii) $-10.1^\circ, -169.9^\circ$ | (iii) $38.2^\circ, 141.8^\circ$ |
| (iv) $-135^\circ, 45^\circ$ | (v) $30^\circ, 150^\circ$ | (vi) $\pm 131.8^\circ, 0^\circ$ |
| 3. (i) $\frac{24}{25}$ | (ii) $\frac{1}{2}$ | (iii) $-\frac{7}{24}$ |
| 4. (i) t^2 | (ii) $\frac{1}{t}$ | (iii) $\frac{1-t^2}{2t^2}$ |
| (iv) $\frac{1}{3+6t-5t^2}$ | (v) $\frac{1-4t+t^2}{3-t^2}$ | |
| 6. (i) 0 | (ii) π | (iii) $\frac{\pi}{4}$ |
| (iv) 0 | (v) $-\frac{\pi}{3}$ | (vi) $\frac{5\pi}{6}$ |
| (vii) $\sin^{-1} \sqrt{3}$ does not exist | (viii) $\frac{3\pi}{4}$ | (ix) $-\frac{\pi}{6}$ |
| (x) $\frac{\pi}{6}$ | (xi) 0 | (xii) $\operatorname{cosec}^{-1} \frac{\sqrt{2}}{2}$ does not exist |