

Answer Key 11

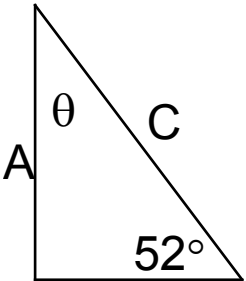
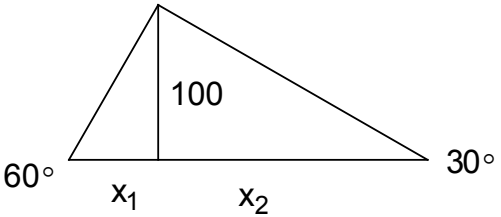
6.1: 5, 8, 9, 10, 14, 16, 17, 18, 19, 20, 21, 26, 41, 48, 57, 65

6.2: 3, 4, 9, 11a, 15, 16, 21, 31, 39, 47

6.1

5) $15^\circ \times \frac{\pi}{180^\circ} = \frac{\pi}{12} \approx .262$	8) $75^\circ \times \frac{\pi}{180^\circ} = \frac{5\pi}{12} \approx 1.309$
9) $-45^\circ \times \frac{\pi}{180^\circ} = -\frac{\pi}{4} \approx -.785$	10) $-30^\circ \times \frac{\pi}{180^\circ} = -\frac{\pi}{6} \approx .524$
14) $3600^\circ \times \frac{2\pi}{360^\circ} = 20\pi \approx 62.832$	16) $-150^\circ \times \frac{\pi}{180^\circ} = -\frac{5\pi}{6} \approx 2.618$
17) $\frac{5\pi}{3} \times \frac{180^\circ}{\pi} = 300^\circ$	18) $\frac{3\pi}{4} \times \frac{180^\circ}{\pi} = 135^\circ$
19) $\frac{5\pi}{6} \times \frac{180^\circ}{\pi} = 150^\circ$	20) $-\frac{3\pi}{2} \times \frac{180^\circ}{\pi} = -270^\circ$
21) $-2 \times \frac{180^\circ}{\pi} = \frac{360^\circ}{\pi} \approx 114.59$	26) $\frac{5\pi}{18} \times \frac{180^\circ}{\pi} = 50^\circ$
41) $400^\circ - 360^\circ = 40^\circ$	48) $-\frac{5\pi}{3} + 2\pi = \frac{\pi}{3}$
57) $s = R\theta = 5\text{cm} \cdot 3 = 15\text{cm}$	65) $A = \frac{1}{2}r^2\theta = \frac{1}{2}(10\text{m})^2 \frac{2\pi}{3} = \frac{100\pi}{3}$

6.2

3) $\sin \theta = 4/5$ $\cos \theta = 3/5$ $\tan \theta = 4/3$	4) $\sin \theta = 7/25$ $\cos \theta = 24/25$ $\tan \theta = 7/24$
9) $\sin \alpha = \frac{3}{\sqrt{3^2 + 5^2}} = \frac{3}{\sqrt{34}} \quad \cos \beta = \frac{3}{\sqrt{34}}$ $\tan \alpha = \frac{3}{4} \quad \cot \beta = \frac{3}{4}$ $\sec \alpha = \frac{\sqrt{3^2 + 5^2}}{5} = \frac{\sqrt{34}}{5} \quad \csc \beta = \frac{\sqrt{34}}{5}$	11a) $\sin 22^\circ = .37461$
15) $\frac{x}{25} = \sin 30^\circ \rightarrow x = 25 \sin 30^\circ = 12.5$	16) $x = 12\sqrt{2} \approx 16.97056$
21) $\frac{x}{28} = \cos \theta \rightarrow x = 28 \cos \theta$ $\frac{y}{28} = \sin \theta \rightarrow y = 28 \sin \theta$	31) $\sin 30^\circ \cos 60^\circ + \sin 60^\circ \cos 30^\circ =$ $\frac{1}{2} \cdot \frac{1}{2} + \frac{\sqrt{3}}{2} \cdot \frac{\sqrt{3}}{2} = \frac{1}{4} + \frac{3}{4} = 1$
39)  $B=35$ $\theta = 90^\circ - 52^\circ = 38^\circ$ $\frac{35}{C} = \cos 52^\circ \rightarrow C = \frac{35}{\cos 52^\circ} \approx 56.849$ $A = \sqrt{C^2 - B^2} \approx 44.798$	47)  $\frac{100}{x_1} = \tan 60^\circ = \sqrt{3} \rightarrow x_1 = \frac{100}{\sqrt{3}}$ $\frac{100}{x_2} = \tan 30^\circ = 1/\sqrt{3} \rightarrow x_2 = 100\sqrt{3}$ $\frac{100}{\sqrt{3}} + 100\sqrt{3} \approx 230.940$