

Chapter 6 Prerequisite Skills

- Consider these angles in standard position.
 i) 135° ii) $\frac{12\pi}{7}$ iii) $-\frac{3\pi}{4}$
 a) In which quadrant does each angle terminate?
 b) Determine the reference angle for each angle.
- Determine all angles coterminal with each angle, θ , on the given domain.
 a) -50° $-180^\circ < \theta < 360^\circ$
 b) $\frac{3\pi}{2}$ $-2\pi < \theta < 4\pi$
 c) 128.4° $-720^\circ < \theta < 720^\circ$
 d) $\frac{\pi}{4}$ $-3\pi < \theta < 4\pi$
- Determine an expression in general form for all angles that are coterminal with each given angle θ .
 a) 115° b) $\frac{7\pi}{3}$ c) 13.4 radians
- For each angle determine its equivalent measure as indicated.
 a) $\frac{7\pi}{5}$ nearest degree
 b) 330° radians; exact value
 c) 4.7 radians nearest tenth of a degree
 d) -50.35° nearest hundredth of a radian
- Without using a calculator, state whether each trigonometric ratio is positive or negative.
 a) $\sin \frac{11\pi}{2}$ b) $\tan 320^\circ$ c) $\sec 5.7$
 d) $\cos(-360^\circ)$ e) $\cot 147.3^\circ$ f) $\csc -9$
- Determine the exact value for each expression. Simplify if possible.
 a) $\cos \frac{5\pi}{3}$ b) $\csc(-300^\circ)$
 c) $\cot \frac{14\pi}{3}$ d) $\sin^2 \frac{\pi}{3}$
- Determine the approximate value for each of the following. Express your answers to the nearest hundredth.
 a) $\tan \frac{7\pi}{6}$ b) $\sec 200^\circ$
 c) $\cos^2(50.3^\circ)$ d) $\cot^2(3.8^\circ) - \cos 3^\circ$
- Perform the indicated operation. Leave answers in terms of π . Write all fractions in simplest form.
 a) $\frac{\pi}{6} + \frac{2\pi}{3}$ b) $\frac{7\pi}{2} - \frac{5\pi}{6}$
 c) $\frac{3\pi}{4} \times \frac{5\pi}{6}$ d) $\frac{3\pi}{8} - \frac{2\pi}{3} + \frac{\pi}{4}$
- Fully factor each expression.
 a) $x^2 - x$
 b) $x^2 - 3x - 4$
 c) $x^2 - y^2$
 d) $3x^2 - 3x - 6$
 e) $2x^3 + 6x^2 - 20x$
- Determine all non-permissible values for each expression in the domain $-\pi \leq \theta \leq 2\pi$.
 a) $\tan \theta$ b) $\frac{\cos \theta}{1 - \tan^2 \theta}$
- Write expressions for the non-permissible values in each part of question #10 if the domain is the set of real numbers.
- Solve the following trigonometric equation for $0 < \theta < 2\pi$.
 $\cos \theta = \frac{\sqrt{3}}{2}$
- Write an expression for the general solution to the equation in question #12 if the domain is the set of real numbers.

