

Homework #4

First & Last Name: _____ Class: _____

For homework to be graded, it must be *fully completed*. This means you must **show your work**.

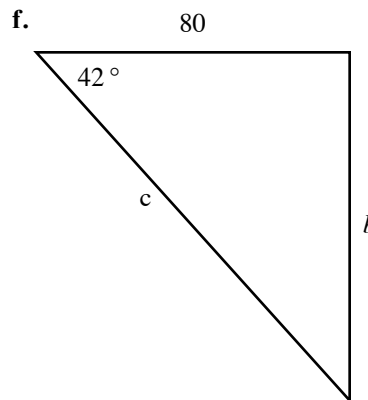
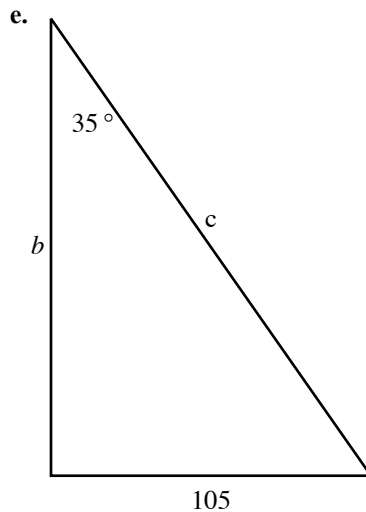
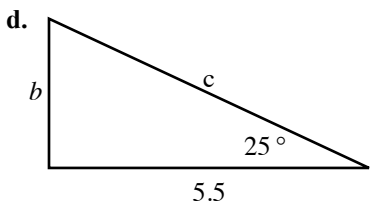
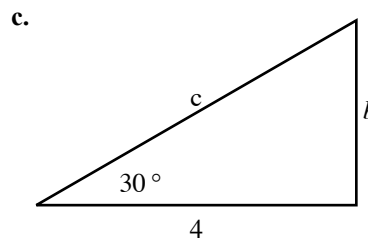
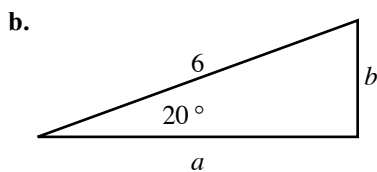
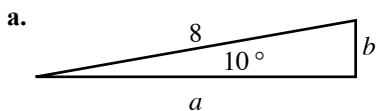
1. Using the Unit Circle, provide the exact values for the following trig functions. Unless specified as degrees, all angle measurements are in radians.

- a. $\cos(0)$ b. $\sin(0)$ c. $\tan(0)$ d. $\cos(\pi/2)$ e. $\sin(\pi/2)$
- f. $\tan(\pi/2)$ g. $\cos(5\pi/6)$ h. $\sin(7\pi/4)$ i. $\tan(4\pi/3)$ j. $\cos(11\pi/6)$
- k. [Challenge] $\sin(13\pi/4)$ l. [Challenge] $\tan(510^\circ)$

2. Using a calculator, provide the values for the following trig functions (to at least 4 significant figures). Unless specified as degrees, all angle measurements are in radians.

- a. $\cos(\pi/10)$ b. $\sin(\pi/5)$ c. $\tan(5\pi/7)$ d. $\cos(3)$ e. $\sin(2)$
- f. $\tan(55^\circ)$ g. $\cos(-15^\circ)$ h. $\sin(77^\circ)$ i. $\tan(725^\circ)$ j. $\cos(179^\circ)$

3. For each of the following right triangles, find all missing side lengths using trigonometry.



4. [Challenge] For each of the following trig functions, explain how you know whether the function is even, odd or neither.

- a. $\sin(x)$ b. $\cos(x)$ c. $\tan(x)$

5. [Challenge] Using the Unit Circle and the Pythagorean Theorem, explain why

$$\sin^2(x) + \cos^2(x) = 1$$