Name_____   Graded Homework   Date_____

Sheilah Chason   Math 442

Welcome Back. Just a bit of trig review ☺. Round all answers to the nearest 0.1 unless otherwise indicated.

Evaluate the following without the use of a calculator. Show all work necessary.
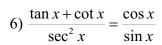
1) $\sec\left(\dfrac{3\pi}{4}\right) =$ 2) $\tan\left(\dfrac{-\pi}{2}\right) =$ 3) $\sin\left(\dfrac{-5\pi}{6}\right) =$

4) If an angle, θ, is drawn in standard position and has a terminal ray passing through the point $(2, -\sqrt{3})$, what is the value of each of the six circular trig functions? Draw a clear picture to answer this question.

Solve the identities, showing clear steps.
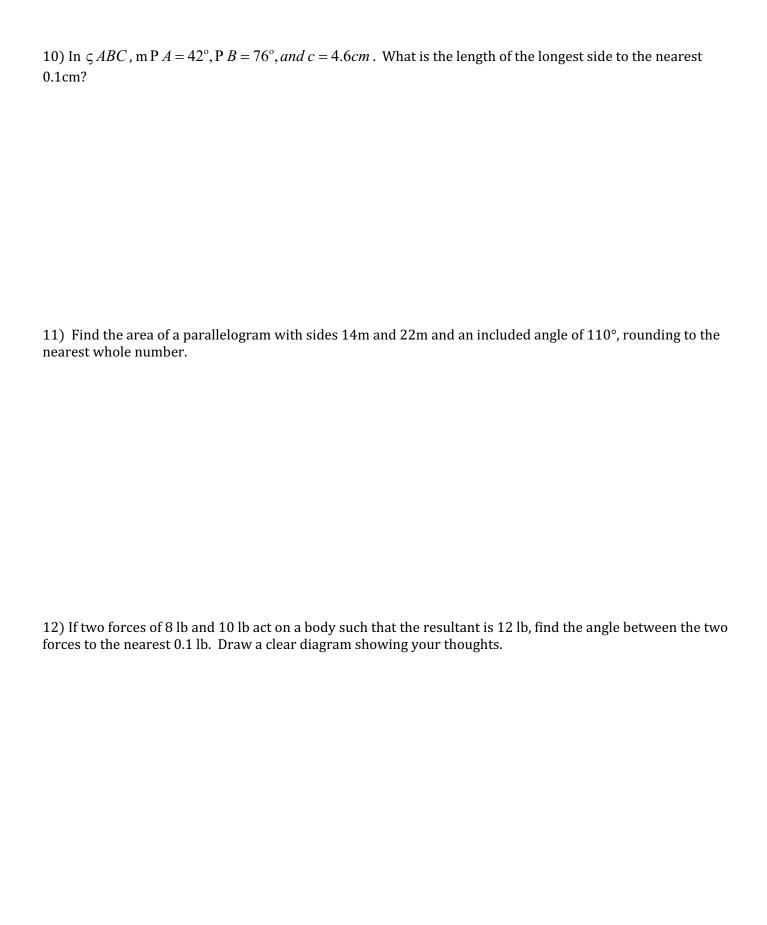
5) $\cos^2\theta - \sin^2\theta = 1 - 2\sin^2\theta$

6) $\dfrac{\tan x + \cot x}{\sec^2 x} = \dfrac{\cos x}{\sin x}$

7) A loading ramp 5m long makes a 25° angle with the level ground beneath it. The ramp is replaced by another ramp 15m long. Find the angle that the new ramp makes with the ground. As always, it is best to draw a clear picture.

Solve the equations within the given domain. Show clear steps.

8) $4\sin^2 x = 3 \quad x \in [0, 2\pi)$

9) $4\cos\theta \tan\theta + 2\tan\theta = 0 \quad \theta \in [0°, 360°)$

10) In $\triangle ABC$, m $\angle A = 42°$, $\angle B = 76°$, $and\ c = 4.6cm$. What is the length of the longest side to the nearest 0.1cm?

11) Find the area of a parallelogram with sides 14m and 22m and an included angle of 110°, rounding to the nearest whole number.

12) If two forces of 8 lb and 10 lb act on a body such that the resultant is 12 lb, find the angle between the two forces to the nearest 0.1 lb. Draw a clear diagram showing your thoughts.

13) How many triangles can be drawn if two sides are 4 and 6 and a non-included angle is 48°? Consider both ways this can be drawn and answer both situations. Show all work leading to your conclusion.