Answer the questions in the spaces provided. **Show all of your work and circle the answer you would like to have graded for each question.**

Name: _____

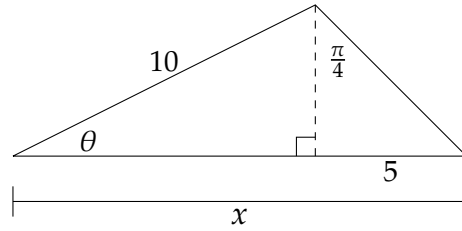(20 points)   1. Show how to compute each of the following by hand. If it is not possible, explain why.

a.) $\arccos\left(\sin\left(-\dfrac{11\pi}{4}\right)\right)$;

b.) $\sin\left(\arctan\left(\dfrac{7}{4}\right)\right)$;

c.) $\arctan\left(\sin\left(\dfrac{4\pi}{3}\right)\right)$;

d.) $\arctan(\cos(\tan(\sin(\pi))))$.

(10 points) 2. Find the exact values of θ and x in the figure below:

(10 points) 3. A 20 foot ladder leans against the side of a building so that there is 10 feet between the bottom of the ladder and the base of the building. If specifications call for the ladder's angle of elevation to be between 25 and 50 degrees, does the placement of this ladder adhere to those safety specifications?