Math 225   Name _____

In-Class Problem Set #4

Please show all work and relevant thought processes for full credit on each problem. If you use a calculator, please state how.

1. Triangle ABC is formed by A=(2,5), B=(-2,-2) and C=(-5,0). Triangle PQR is formed by P=(-14,-16), Q=(-6,-2) and R(0,-6). Give enough evidence to state whether these two triangles are similar or not. Decimal approximations are acceptable. (8 pts.)

2. Find the area of a parallelogram formed by a two sides of length 10 and 20, whose included angle is 60 degrees. Leave your answer in simplest radical form. (6 pts.)

3. Rhombus has two pairs of angles that measure 78 degrees and 102 degrees. If the shorter diagonal is 10 cm long, to the nearest hundredth, what is the perimeter of the rhombus? (8 pts.)

4. The lines $y = 2x$ and $y = -3x + 5$ intersect at the point P=(1,2). Find both the obtuse and acute angles whose vertex is at P. (8 pts.)

5. A trapezoid ABCD is formed with $AB \| CD$, $\angle C = 30°$ and $\angle D = 45°$.
    a. How big are $\angle A$ and $\angle D$? (2 pts.)
    b. If the height of the trapezoid is 6 cm, find the lengths of the non-parallel sides in simplest radical form. (6 pts.)
    c. If AB=4, What is the area of the trapezoid in simplest radical form? (4 pts.)