Honors Geometry Ch 11 WS #2

Part I

For each problem make a sketch and show all steps for the solution including area formulas.

1. Two circles have radii 3 and 12 units respectively. What is the ratio of their areas?

2. The circumference of a circle and the perimeter of a square are each 20 cm. Which has the greater area? How much greater?

3. Given a square with side length of 10 units, find the area of the region bounded by its inscribed and circumscribed circles.

4. What is the radius of a circle if the length of a 45° arc is 3π units?

5. What is the radius of a circle if the length of a 72° arc is 4π units?

6. The length of a 60° arc is 1 cm. Find the radius of the arc and the length of the chord that intercepts the arc.

7. In a circle with a radius of 6 units a sector has area 15π units^2. What is the length of the arc of the sector?

8. Find the area of a segment of a circle given that the radius is 12 units and the measure of the arc is 60°.

9. A regular octagon is inscribed in a circle of radius 6 units. Find the area of that part of the circular region that is outside of the octagon.

10. The perimeter of a square is equal to the circumference of a circle. Which has the greater area? Find the ratio of the area of the square to the area of the circle.

Part II
For each problem find the area of the given figure, or if a part is shaded find the area of the shaded region. In all problems show all steps for the solution including area formulas.

① (triangle, 4 in)

② square, 10 cm

③ 6 in, 5 in, 10 in

④ 10 cm, 8 cm (circle with inscribed rectangle, shaded)

⑤ 5 ft, 100° (circle with shaded sector)

⑥ 2 (circle with inscribed triangle, shaded)

⑦ 5" (hexagon with inscribed circle)

⑧ 45°, 4, 12 (parallelogram)

⑨ 9 cm, 120° (circle with shaded region)

⑩ 4 in (two circles, shaded annulus)

⑪ 2", 5" (two circles, shaded annulus)

⑫ 8 cm (square with shaded region)

⑬ 12 m (square with shaded lens region)