(1) Given a line segment, can we use a compass and straightedge to find its midpoint? If so, how?

(2) Given a line segment, can we use a compass and straightedge to find its perpendicular bisector? If so, how?

(3) Given a point, can we use a compass and straightedge to construct a right angle whose vertex is that point? If so, how?

(4) Given a circle, can we use a compass and straightedge to find a tangent line to the circle? If so, how?

(5) Given a circle, can we use a compass and straightedge to construct a square such that all four sides of the square are tangent to the circle? If so, how? (Note that this is called circumscribing the circle with the square.)

(6) In class, it was claimed that given any chord in a circle, the perpendicular bisector of that chord is a diameter of the circle. Is this claim true? Why or why not?

(7) In class, it was claimed that if we circumscribe the circle with a square and intersect the diagonals of the circumscribing square, then the intersection point will be the center of the circle. Is this claim true? Why or why not?