Perpendicular bisectors

1. Let A(2, 6) and B(0, -4) be end points of line segment AB.

   a) Find the slope of the line segment AB.

   b) If line k is perpendicular to line segment AB, find the slope of line k.

   c) Find the midpoint of line segment AB.

   d) If line k passes through the midpoint of line segment AB, find an equation of the line k.

2. Let C(0, 4) and D(6, -2) be end points of line segment CD. Find an equation of a perpendicular bisector of line segment CD.