Homework RHS
Geometry RSH

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.

$$m_{AB} = \frac{-4-6}{0-2} = \frac{-10}{-2} = 5$$

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

$$m_k = -\frac{1}{m_{AB}} = -\frac{1}{5}$$

c) Find the midpoint of line segment AB.

$$\left(\frac{2+0}{2}, \frac{6+(-4)}{2}\right) = (1, 1)$$

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

$$y - 1 = -\frac{1}{5}(x - 1)$$

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.

$m_{CD} = \frac{-2-4}{6-0} = \frac{-6}{6} = -1$

$m_{\perp} = 1$

Midpt $\left(\frac{0+6}{2}, \frac{4+(-2)}{2}\right)$

$= (3, 1)$

$y - 1 = 1(x - 3)$