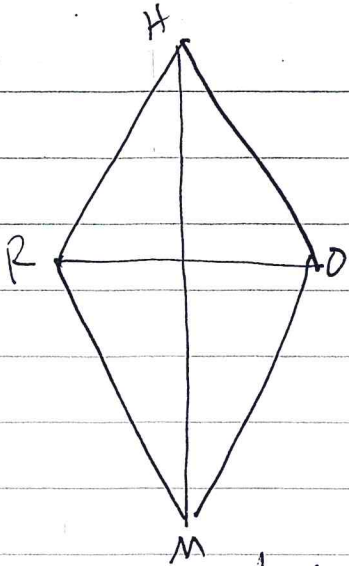


2



Prove: diagonals of a rhombus are \perp bisectors of each other.

Given: Rhombus RHDM with diagonals \overline{RD} and \overline{HM}

Show: $\overline{HM} \perp \overline{RD}$; they bisect each other

What

Why

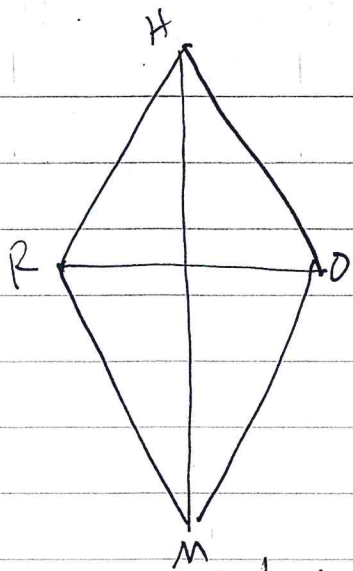
? $\overline{HO} \cong \overline{OM} \cong \overline{MR} \cong \overline{RH}$
? \angle are angle bisectors
 $\triangle RHO$ & $\triangle HRM$ are isosceles

?
Rhombus Angle Bisector Th.

{ Vertex Angle Bisector Th.
for isosceles \triangle 's
(see p. 242; C-28)

\therefore The diagonals of a rhombus \perp bisect each other.

3



Prove: diagonals of a rhombus are \perp bisectors of each other.

Given: Rhombus RHDM with diagonals \overline{RD} and \overline{HM}

Show: $\overline{HM} \perp \overline{RD}$; they bisect each other

What

Why

? $\overline{HO} \cong \overline{OM} \cong \overline{MR} \cong \overline{RH}$
 ? \overline{RD} & \overline{HM} are angle bisectors
 ? $\triangle RHO$ & $\triangle HRM$ are isosceles
 ? \overline{HM} & \overline{RD} are both \perp bisectors (of each other)

? definition of rhombus
 Rhombus Angle Bisector Th.
 ? def of isosceles \triangle
 { Vertex Angle Bisector Th for isosceles \triangle 's
 (see p. 242; C-28)

\therefore The diagonals of a rhombus \perp bisect each other.