Geometry

5.2 Use Perpendicular Bisectors

# Perpendicular Bisector

segment

bisects

perpendicular

* Segment that is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to and \_\_\_\_\_\_\_\_\_\_ a \_\_\_\_\_\_\_\_\_\_

## Perpendicular Bisector Theorem

endpoints

equidistant

Perpendicular bisector

If a point is on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a segment, then it is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the segment

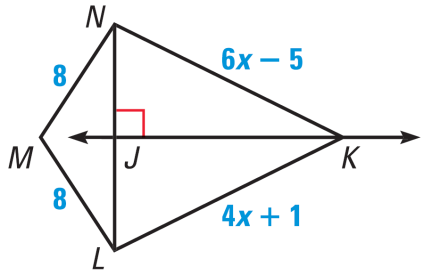
## Converse of the Perpendicular Bisector Theorem

Perpendicular bisector

endpoints

equidistant

If a point is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the \_\_\_\_\_\_\_\_\_\_\_\_\_ of a segment, then it is on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the segment

In the diagram, is the perpendicular bisector of .

Find NK.

Since is bisector, then NK = LK ( bisector theorem).

6x – 5 = 4x + 1 🡪 2x – 5 = 1 🡪 2x = 6 🡪 x = 3

Find NK: 6x – 5 🡪 6(3) – 5 = 13

Explain why M is on .

Since MN = ML, M is equidistant from each end of . Thus by then Converse of the Perpendicular Bisector Theorem, M is on the perpendicular bisector.

# Concurrent

Point of concurerency

point

intersect

* Several lines that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at same \_\_\_\_\_\_\_\_\_\_ (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

## Concurrency of Perpendicular Bisectors of a Triangle

vertices

equidistant

triangle

Perpendicular bisectors

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a \_\_\_\_\_\_\_\_\_\_\_\_ intersect at a point that is \_\_\_\_\_\_\_\_\_\_\_\_\_ from the \_\_\_\_\_\_\_\_\_\_\_ of a triangle

Hot pretzels are sold from store at A, B, and E. Where could the pretzel distributor be located if it is equidistant from those three points?

# Circumcenter

perpendicular bisectors

concurrency

* The point of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a triangle.

center

circumcenter

triangle

circumscribed

* If a circle was \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ around a \_\_\_\_\_\_\_\_\_\_\_\_\_, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ would also be the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the circle.

Assignment: 306 #2-16 even, 20, 22, 26, 28, 30, 34-40 even = 17 total

Extra Credit: 309 #2, 4 = +2