

New Concepts

- Median
- Altitude
- Perpendicular Bisector

Problem Set #24

“An education isn’t how much you have committed to memory, or even how much you know. It’s being able to differentiate between what you know and what you don’t.”

- Anatole France

New Postulates and Theorems

- Theorem 30 – If a point lies on the perpendicular bisector of a segment, then the point is equidistant from the endpoints of the segment.
- Theorem 31 – If a point is equidistant from the endpoints of a segment, then the point lies on the perpendicular bisector of the segment.
- Theorem 32 – If a point lies on the bisector of an angle, then the point is equidistant from the sides of the angle.
- Theorem 33 – If a point is equidistant from the sides of an angle, then the point lies on the bisector of the angle.

Exercises:

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Problems:

24-1 Points of concurrency

Draw $\triangle ABC$ to be a 6-8-10 triangle.

The three perpendicular bisectors of each side all intersect at a single point. This point is called the circumcenter of $\triangle ABC$. Label this as point X.

The medians drawn from each vertex also intersect at a single point. This point is called the centroid of $\triangle ABC$. Label this as point Y.

What is the length XY?