Section 4.7

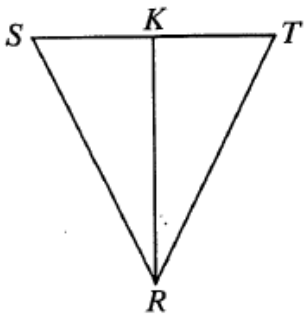
1. If K is the midpoint of $\overline{ST}$, then $\overline{RK}$ is called a(n) ___?___ of $\triangle RST$.

2. If $\overline{RK} \perp \overline{ST}$, then $\overline{RK}$ is called a(n) ___?___ of $\triangle RST$.

3. If K is the midpoint of $\overline{ST}$ and $\overline{RK} \perp \overline{ST}$, then $\overline{RK}$ is called a(n) ___?___ of $\overline{ST}$.

4. If $\overline{RK}$ is both an altitude and a median of $\triangle RST$, then:
a. $\triangle RSK \cong \triangle RTK$ by ___?___. **b.** $\triangle RST$ is a(n) ___?___ triangle.

5. If R is on the perpendicular bisector of $\overline{ST}$, then R is equidistant from ___?___ and ___?___. Thus ___?___ = ___?___.



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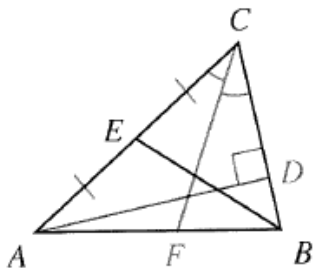
from ___?___ and ___?___. Thus ___?___ = ___?___.

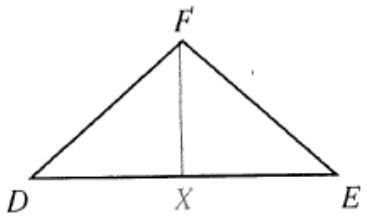
6. Refer to $\triangle ABC$ and name each of the following.
a. a median of $\triangle ABC$
b. an altitude of $\triangle ABC$
c. a bisector of an angle of $\triangle ABC$



7. Draw $\overline{XY}$. Label its midpoint Q.

e. What name for PQ best describes the relationship between P and Q?

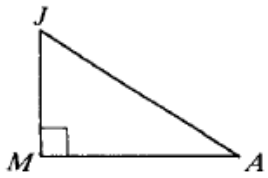
8. Given: $\triangle DEF$ is isosceles with $DF = EF$;
$\overline{FX}$ bisects $\angle DFE$.
a. Would the median drawn from F to $\overline{DE}$ be the same segment as $\overline{FX}$?
b. Would the altitude drawn from F to $\overline{DE}$ be the same segment as $\overline{FX}$?



Section 10.3

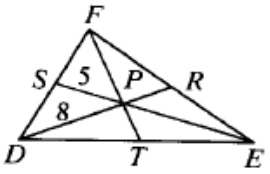
3. Is there some kind of triangle such that the perpendicular bisector of each side is also an angle bisector, a median, and an altitude?

4. $\triangle JAM$ is a right triangle.



a. Is $\overline{JM}$ an altitude of $\triangle JAM$?
b. Name another altitude shown.
c. In what point do the three altitudes of $\triangle JAM$ meet?
d. Where do the perpendicular bisectors of the sides of $\triangle JAM$ meet?
e. Does your answer to (d) agree with Theorem 10-2?

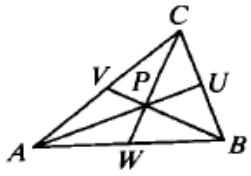
5. The medians of $\triangle DEF$ are shown. Find the lengths indicated.



a. EP = ___?___ **b.** PR = ___?___
c. If $FT = 9$, then PT = ___?___ and FP = ___?___.

6. Given: $\overline{RJ}$ and $\overline{SK}$ are medians of $\triangle RST$;

$\overline{AU}$, $\overline{BV}$, and $\overline{CW}$ are the medians of $\triangle ABC$.



12. If $AP = x^2$ and $PU = 2x$, then x = ___?___.

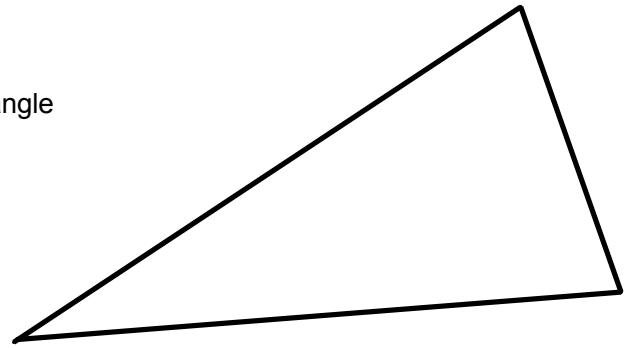
13. If $BP = y^2 + 1$ and $PV = y + 2$, then y = ___?___ or y = ___?___.

14. If $CW = 2z^2 - 5z - 12$ and $CP = z^2 - 15$, then z = ___?___ and PW = ___?___.

Constructions - Compass and Straightedge showing marks

Construction 4: Perpendicular Bisector of a segment

Construct a Median of a given triangle



Construct an altitude of a given triangle