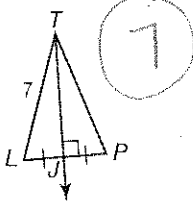


5-1 Practice

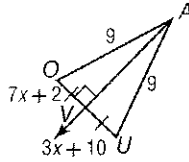
Bisectors of Triangles

Find each measure.

1. TP



2. VU



$$7x + 2 = 3x + 10$$

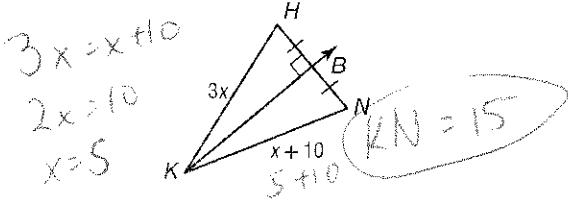
$$4x = 8$$

$$x = 2$$

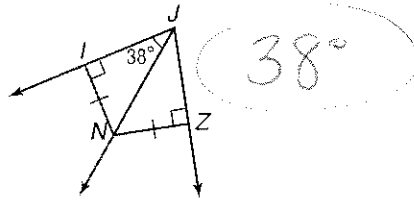
$$VU = 3(2) + 10$$

$$= 16$$

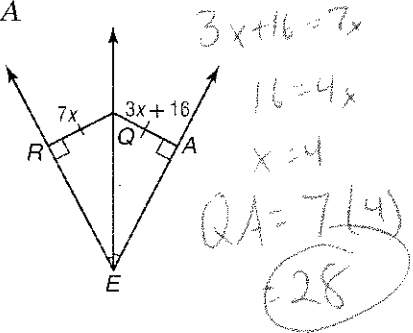
3. KN



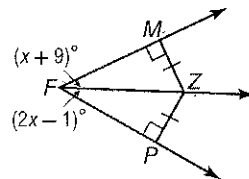
4. $\angle NJZ$



5. QA



6. $\angle MFZ$



$$x + 9 = 2x - 1$$

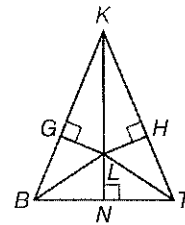
$$x = 10$$

$$10 + 9 = 19$$

Point L is the circumcenter of $\triangle BKT$. List any segment(s) congruent to each segment below.

7. $\overline{BN} \cong \overline{NT}$

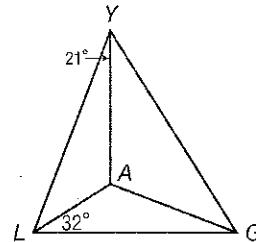
8. $\overline{BL} \cong \overline{KL} \cong \overline{LT}$



Point A is the incenter of $\triangle LYG$. Find each measure below.

9. $\angle ILA = 32^\circ$

10. $\angle JGA = 37^\circ$



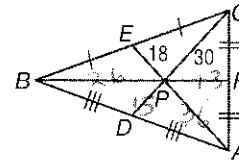
11. **SCULPTURE** A triangular entranceway has walls with corner angles of 50, 70, and 60. The designer wants to place a tall bronze sculpture on a round pedestal in a central location equidistant from the three walls. How can the designer find where to place the sculpture?

Find the incenter, where the three angle bisectors meet.

5-2 Practice

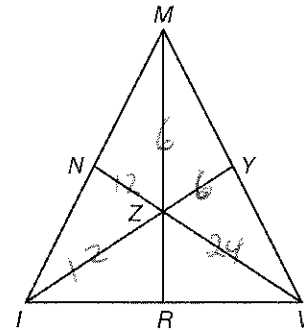
Medians and Altitudes of Triangles

In $\triangle ABC$, $CP = 30$, $EP = 18$, and $BF = 39$. Find each length.



- 1. PD 2. FP 13
- 15*
- 3. BP 4. CD 45
- 26*
- 5. PA 6. EA 54
- 36*

In $\triangle MIV$, Z is the centroid, $MZ = 6$, $YI = 18$, and $NZ = 12$. Find each measure.



- 7. ZR 8. YZ
- 3*
- 9. MR 10. ZV
- 9*
- 11. NV 12. IZ
- 36*
- 12*

COORDINATE GEOMETRY Find the coordinates of the centroid of each triangle.

- 13. $I(3, 1), J(6, 3), K(3, 5)$
- 14. $H(0, 1), U(4, 3), P(2, 5)$

COORDINATE GEOMETRY Find the coordinates of the orthocenter of each triangle.

- 15. $P(-1, 2), Q(5, 2), R(2, 1)$
- 16. $S(0, 0), T(3, 3), U(3, 6)$

17. MOBILES Nabuko wants to construct a mobile out of flat triangles so that the surfaces of the triangles hang parallel to the floor when the mobile is suspended. How can Nabuko be certain that she hangs the triangles to achieve this effect?

She needs to hang each \triangle from its center of gravity, or centroid, which is the point at which the three medians of the \triangle intersect.