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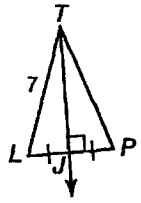
5-3 Practice

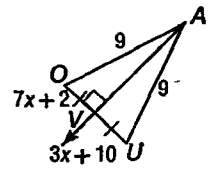
Bisectors of Triangles

Find each measure.

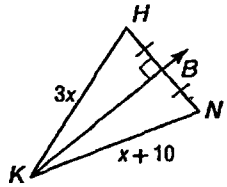
1. TP



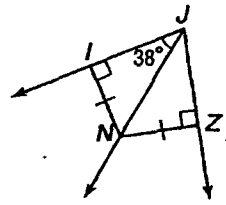
2. VU



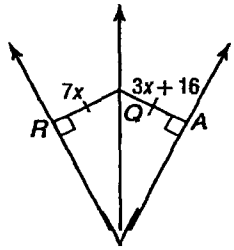
3. KN



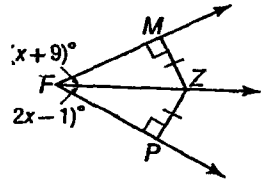
4. $\angle NJZ$



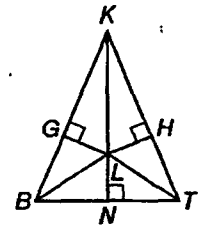
5. QA



6. $\angle MFZ$



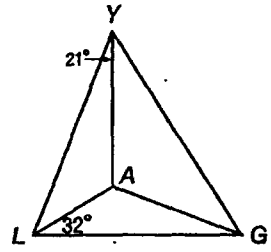
Point P is the circumcenter of $\triangle ABC$. List any segment(s) congruent to each segment.



7. $\overline{BN}$

8. $\overline{BL}$

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



9. $\angle YLA$

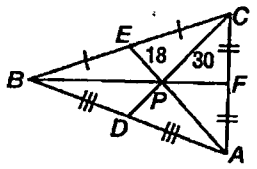
10. $\angle YGA$

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?

5-2 Practice

Medians and Altitudes of Triangles

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



1. PD

2. FP

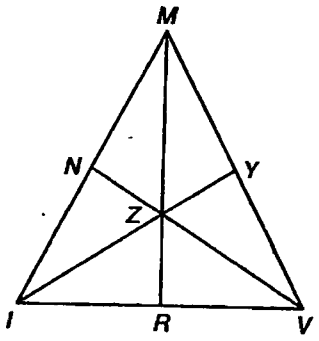
3. BP

4. CD

5. PA

6. EA

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



7. ZR

8. YZ

9. MR

10. ZV

11. NV

12. IZ

COORDINATE GEOMETRY Find the coordinates of the centroid of the triangle with the given vertices.

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 the triangle with the given vertices.

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?

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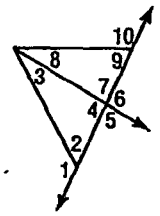
5-3 Practice

Inequalities in One Triangle

Use the figure at the right to determine which angle has the greatest measure.



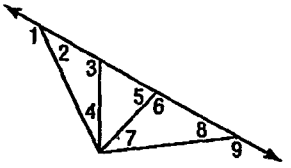
1. $\angle 1, \angle 3, \angle 4$

2. $\angle 4, \angle 8, \angle 9$

3. $\angle 2, \angle 3, \angle 7$

4. $\angle 7, \angle 8, \angle 10$

Use the Exterior Angle Inequality Theorem to list all angles that satisfy the stated condition.



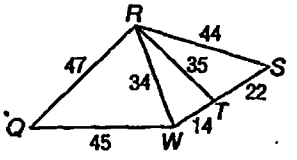
5. measures are less than $m\angle 1$

6. measures are less than $m\angle 3$

7. measures are greater than $m\angle 7$

8. measures are greater than $m\angle 2$

Use the figure at the right to determine the relationship between the measures of the given angles.



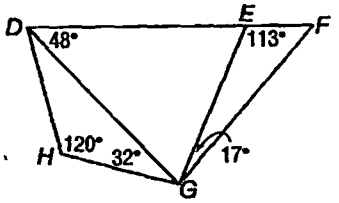
9. $m\angle QRW, m\angle RWQ$

10. $m\angle RTW, m\angle TWR$

11. $m\angle RST, m\angle TRS$

12. $m\angle WQR, m\angle QRW$

Use the figure at the right to determine the relationship between the lengths of the given sides.



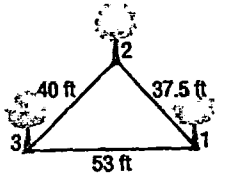
13. $\overline{DH}, \overline{GH}$

14. $\overline{DE}, \overline{DG}$

15. $\overline{EG}, \overline{FG}$

16. $\overline{DE}, \overline{EG}$

17. SPORTS The figure shows the position of three trees on one part of a disc golf course. At which tree position is the angle between the trees the greatest?



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5-5 Practice

The Triangle Inequality

Is it possible to form a triangle with the given side lengths? If not explain why not.

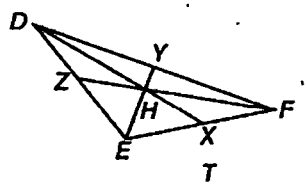
1. 9, 12, 18
2. 8, 9, 17
3. 14, 14, 19
4. 23, 26, 50
5. 32, 41, 63
6. 2.7, 3.1, 4.3
7. 0.7, 1.4, 2.1
8. 12.3, 13.9, 25.2

Find the range for the measure of the third side of a triangle given the measures of two sides.

9. 6 ft and 19 ft
10. 7 km and 29 km
11. 13 in. and 27 in.
12. 18 ft and 23 ft
13. 25 yd and 38 yd
14. 31 cm and 39 cm
15. 42 m and 6 m
16. 54 in. and 7 in.

17. **Given:** H is the centroid of $\triangle EDF$.

Prove: $EY + FY > DE$



Proof:

Statements	Reasons
1. H is the centroid of $\triangle EDF$.	1. Given
2. $\overline{EY}$ is a median.	2. _____
3. _____	3. Definition of median
4. _____	4. Definition of midpoint
5. $EY + DY > DE$	5. _____
6. $EY + FY > DE$	6. _____

18. **GARDENING** Ha Poong has 4 lengths of wood from which he plans to make a border for a triangular-shaped herb garden. The lengths of the wood borders are 8 inches, 10 inches, 12 inches, and 18 inches. How many different triangular borders can Ha Poong make?