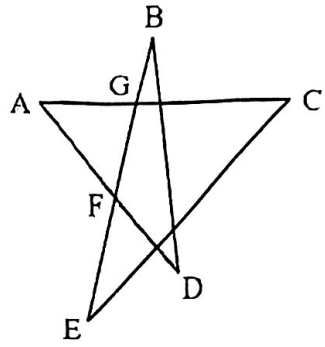
2. EXAMPLES

☆**Example 1.** If $\angle A = 22°$ and $\angle AFG = \angle AGF$, Then $\angle B + \angle D =$

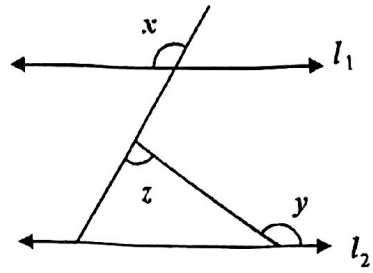
(A) 54° (B) 66° (C) 79° (D) 88° (E) 100°



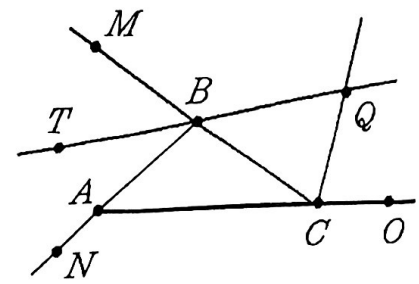
Example 10. x, y, and z are the measures of the angles shown. $l_1 // l_2$. The measure of x is:

A. $180^\circ - y$ B. $180^\circ - z$ C. $180^\circ - z + y$

D. $180^\circ + z - y$ E. $z + y - 180^\circ$



Example 13. In the diagram, $\angle MBA$, $\angle NAC$, and $\angle OCB$ are exterior angles of triangle ABC. Lines TB and CQ intersect at point Q. Ray BT and ray CQ bisect $\angle MBA$ and $\angle OCB$ respectively. Then the measure of $\angle BQC$ is:



A. equal to the measure of $\angle CAN$.

B. equal to the measure of $\frac{\angle CAN}{2}$.

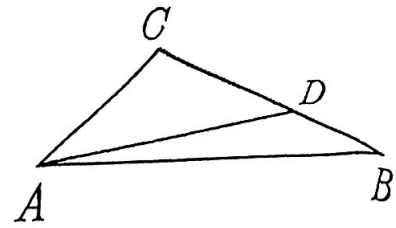
C. equal to the measure of $\frac{\angle CAN}{3}$.

D. equal to the measure of $\frac{\angle CAN}{4}$.

E. none of these.

Example 17. In ΔABC, $\overline{AC}=\overline{CD}$ and $\angle CAB-\angle ABC=40^\circ$. Then $\angle BAD$ equals:

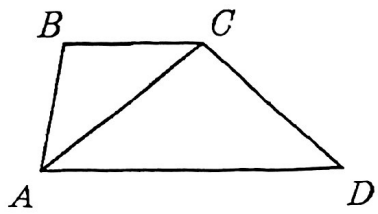
A.15° B. 20° C. 30° D. 35° E. 40°



Problem 8. In the adjacent figure, sides $\overline{AD}$ and $\overline{BC}$ are parallel, segments $\overline{AC}$ and $\overline{CD}$ have equal length, $\angle ABC = 95^\circ$ and $\angle BAC = 35^\circ$. Then $\angle ACD$ is:

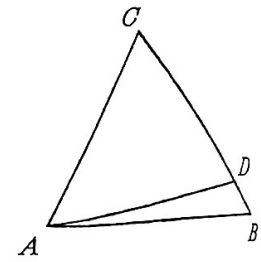
A. 80° B. 90° C. 100° D. 120°

E. none of the above



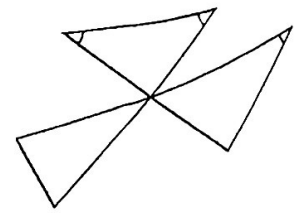
Problem 12. If in ΔABC, $AC = CD$ and $\angle CAB - \angle ABC = 30^\circ$, then $\angle BAD$ is:

A. 10° B. 15° C. 20° D. $22\frac{1}{2}^\circ$ E. 30°



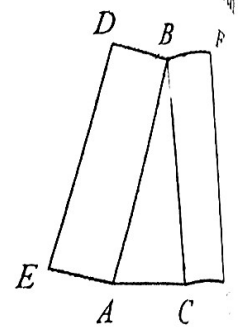
Problem 13. In the given figure, the sum of the marked angles is:

A. 180° B 360° C. 540° D. 270° E. cannot be determined.



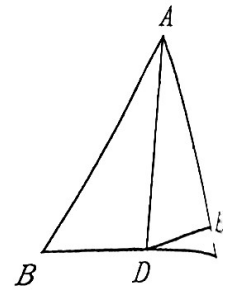
Problem 10. In the figure, $AB = CB$, quadrilaterals $ABDE$ and $CBFG$ are both rectangles, and $\angle BAC = 70°$. Find $\angle DBF$.

A. $105°$ B. $110°$ C. $120°$ D. $130°$ E. $140°$



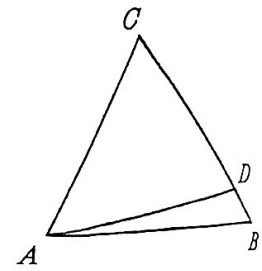
Problem 11. In the figure, ΔABC is equilateral, $\angle DAB = 30°$, and $AE = AD$. Find $\angle EDC$.

A. $15°$ B. $20°$ C. $12\frac{1}{2}°$ D. $30°$ E. $7\frac{1}{2}°$



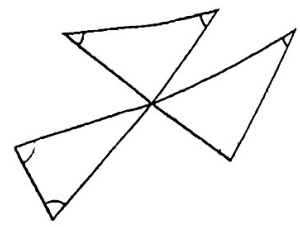
Problem 12. If in ΔABC, $AC = CD$ and $\angle CAB - \angle ABC = 30°$, then $\angle BAD$ is:

A. $10°$ B. $15°$ C. $20°$ D. $22\frac{1}{2}°$ E. $30°$



Problem 13. In the given figure, the sum of the marked angles is:

A. $180°$ B. $360°$ C. $540°$ D. $270°$ E. cannot be determined.



Problem 21. The complement of an angle is $\frac{1}{7}$ of the supplement of that angle.

What is the complement?

A. 15° B. 60° C. 75° D.105° E. 120°

Problem 24. Twice the measure of the supplement of an angle is added to three times the measure of the complement of the same angle. The sum is the measure of an interior angle of a regular nine-sided polygon. What is the measure of the supplement of the angle?

A.82° B. 86° C. 90° D. 94° E. none of these

Problem 25. $\overrightarrow{OB}$ bisects $\angle AOC$. If $m\angle AOB = 3x + 16$ and $m\angle BOC = 8x - 14$, then $m\angle AOC =$

A. 6 B. 20 C. 34 D. 56 E. 68