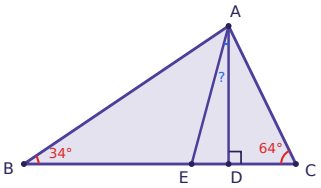
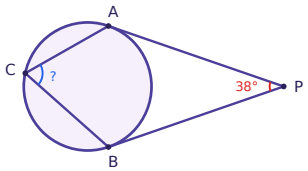
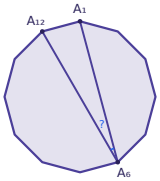
In triangle ABC, AD is the altitude to BC and AE bisects ∠BAC (D and E lie on BC). If ∠ABC = 34° and ∠ACB = 64°, find ∠DAE.



PA and PB are tangent to a circle at A and B. Point C lies on the major arc AB. If ∠APB = 38°, find ∠ACB.

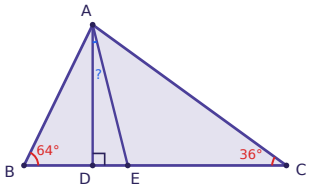


$A_1A_2\ldots A_{12}$ is a regular 12-sided polygon. Find $\angle A_1A_6A_{12}$.

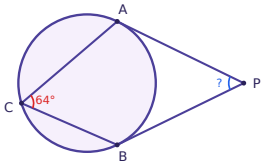


The sum of all but one of the interior angles of a convex polygon is 3827°. How many sides does the polygon have?

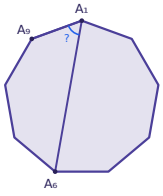
In triangle ABC, AD is the altitude to BC and AE bisects ∠BAC (D and E lie on BC). If ∠ABC = 64° and ∠ACB = 36°, find ∠DAE.



PA and PB are tangent to a circle at A and B. Point C lies on the major arc AB. If ∠ACB = 64°, find ∠APB.



$A_1A_2\ldots A_9$ is a regular 9-sided polygon. Find $\angle A_6A_1A_9$.



The sum of all but one of the interior angles of a convex polygon is 2188°. Find the remaining interior angle.

Expert Angle Problems: Triangle Centers, Circles & Polygons · 2

ANSWER

71°

Expert Angle Problems: Triangle Centers, Circles & Polygons · 1

ANSWER

15°

Expert Angle Problems: Triangle Centers, Circles & Polygons · 4

ANSWER

24

Expert Angle Problems: Triangle Centers, Circles & Polygons · 3

ANSWER

15°

Expert Angle Problems: Triangle Centers, Circles & Polygons · 6

ANSWER

52°

Expert Angle Problems: Triangle Centers, Circles & Polygons · 5

ANSWER

14°

Expert Angle Problems: Triangle Centers, Circles & Polygons · 8

ANSWER

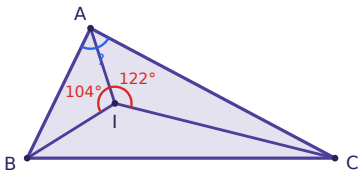
152°

Expert Angle Problems: Triangle Centers, Circles & Polygons · 7

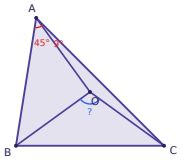
ANSWER

60°

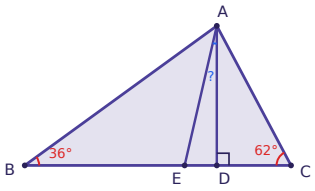
I is the incenter of triangle ABC (the point where its angle bisectors meet). If ∠AIB = 104° and ∠AIC = 122°, find ∠BAC.



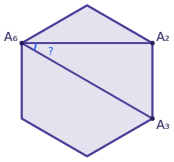
O is the circumcenter of acute triangle ABC. If ∠OAB = 45° and ∠OAC = 9°, find ∠BOC.



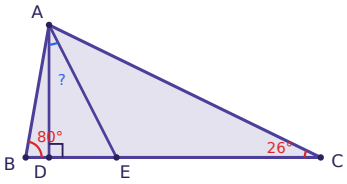
In triangle ABC, AD is the altitude to BC and AE bisects ∠BAC (D and E lie on BC). If ∠ABC = 36° and ∠ACB = 62°, find ∠DAE.



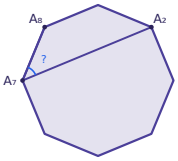
$A_1A_2\ldots A_6$ is a regular 6-sided polygon. Find $\angle A_2A_6A_3$.



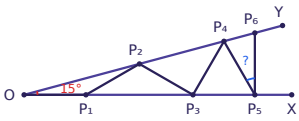
In triangle ABC, AD is the altitude to BC and AE bisects ∠BAC (D and E lie on BC). If ∠ABC = 80° and ∠ACB = 26°, find ∠DAE.



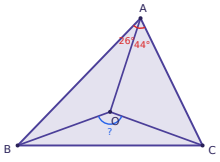
$A_1A_2\ldots A_8$ is a regular 8-sided polygon. Find $\angle A_2A_7A_8$.



∠XOY = 15°. Points P_1, P_3, P_5, … lie on ray OX and points P_2, P_4, P_6, … lie on ray OY, each point farther from O than the one before it on the same ray, so that $OP_1 = P_1P_2 = P_2P_3 = \ldots = P_5P_6$. Find $\angle P_4P_5P_6$.



O is the circumcenter of acute triangle ABC. If ∠OAB = 26° and ∠OAC = 44°, find ∠BOC.



Expert Angle Problems: Triangle Centers, Circles & Polygons · 10

ANSWER

108°

Expert Angle Problems: Triangle Centers, Circles & Polygons · 9

ANSWER

88°

Expert Angle Problems: Triangle Centers, Circles & Polygons · 12

ANSWER

30°

Expert Angle Problems: Triangle Centers, Circles & Polygons · 11

ANSWER

13°

Expert Angle Problems: Triangle Centers, Circles & Polygons · 14

ANSWER

45°

Expert Angle Problems: Triangle Centers, Circles & Polygons · 13

ANSWER

27°

Expert Angle Problems: Triangle Centers, Circles & Polygons · 16

ANSWER

140°

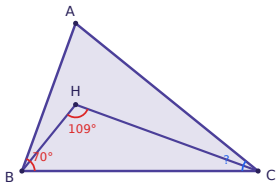
Expert Angle Problems: Triangle Centers, Circles & Polygons · 15

ANSWER

30°

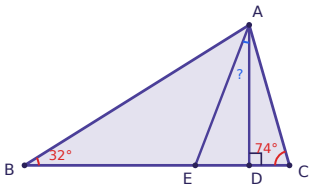
Expert Angle Problems: Triangle Centers, Circles & Polygons · 17

H is the orthocenter of acute triangle ABC (the point where its altitudes meet). If ∠BHC = 109° and ∠ABC = 70°, find ∠ACB.



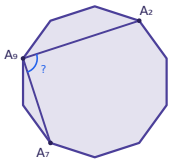
Expert Angle Problems: Triangle Centers, Circles & Polygons · 18

In triangle ABC, AD is the altitude to BC and AE bisects ∠BAC (D and E lie on BC). If ∠ABC = 32° and ∠ACB = 74°, find ∠DAE.



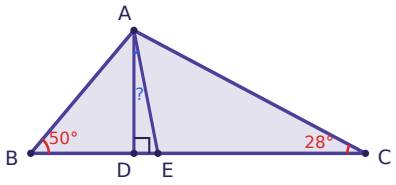
Expert Angle Problems: Triangle Centers, Circles & Polygons · 19

$A_1A_2\ldots A_{10}$ is a regular 10-sided polygon. Find $\angle A_2A_9A_7$.



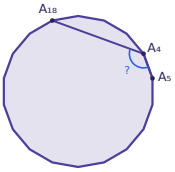
Expert Angle Problems: Triangle Centers, Circles & Polygons · 20

In triangle ABC, AD is the altitude to BC and AE bisects ∠BAC (D and E lie on BC). If ∠ABC = 50° and ∠ACB = 28°, find ∠DAE.



Expert Angle Problems: Triangle Centers, Circles & Polygons · 21

$A_1A_2\ldots A_{18}$ is a regular 18-sided polygon. Find $\angle A_5A_4A_{18}$.

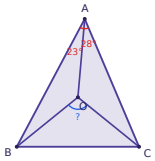


Expert Angle Problems: Triangle Centers, Circles & Polygons · 22

The sum of all but one of the interior angles of a convex polygon is 3816°. How many sides does the polygon have?

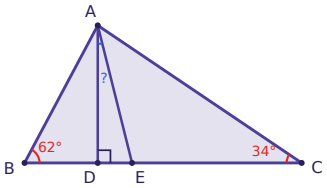
Expert Angle Problems: Triangle Centers, Circles & Polygons · 23

O is the circumcenter of acute triangle ABC. If ∠OAB = 23° and ∠OAC = 28°, find ∠BOC.



Expert Angle Problems: Triangle Centers, Circles & Polygons · 24

In triangle ABC, AD is the altitude to BC and AE bisects ∠BAC (D and E lie on BC). If ∠ABC = 62° and ∠ACB = 34°, find ∠DAE.



Expert Angle Problems: Triangle Centers, Circles & Polygons · 18

ANSWER

21°

Expert Angle Problems: Triangle Centers, Circles & Polygons · 17

ANSWER

39°

Expert Angle Problems: Triangle Centers, Circles & Polygons · 20

ANSWER

11°

Expert Angle Problems: Triangle Centers, Circles & Polygons · 19

ANSWER

90°

Expert Angle Problems: Triangle Centers, Circles & Polygons · 22

ANSWER

24

Expert Angle Problems: Triangle Centers, Circles & Polygons · 21

ANSWER

130°

Expert Angle Problems: Triangle Centers, Circles & Polygons · 24

ANSWER

14°

Expert Angle Problems: Triangle Centers, Circles & Polygons · 23

ANSWER

102°