Angles and Angle Relationships

Choose one answer per question. Circle A, B, C, or D.

1. The opening between two rays measures 124°. What type of angle is it?
   A. Obtuse
   B. Acute
   C. Right
   D. Straight

2. Two rays start at the same point and head in opposite directions along one line. What angle do they form?
   A. 270°
   B. 90°
   C. 180°
   D. 360°

3. Two angles are complementary. One measures 47°. What does the other measure?
   A. 47°
   B. 43°
   C. 53°
   D. 133°

4. One of two supplementary angles measures 116°. What is the other angle?
   A. 116°
   B. 54°
   C. 74°
   D. 64°

5. A rotating sign makes a clockwise turn of 290°. How many more degrees clockwise will return it to its starting orientation for the first time?
   A. 20°
   B. 70°
   C. 110°
   D. 290°

6. Two straight lines cross. One of the four angles at the intersection measures 31°. What is the measure of the angle vertically opposite it?

A. 31°
B. 59°
C. 118°
D. 149°

7. A diagonal crosses two parallel lines. The upper-right angle at one crossing measures 78°. What is the upper-right angle at the other crossing?

A. 156°
B. 12°
C. 102°
D. 78°

8. A transversal crosses two parallel lines. Two marked angles lie between the parallel lines at different crossings and on opposite sides of the transversal. What relationship do they have?

A. They are corresponding angles at the same crossing.
B. They form a linear pair and must add to 180°.
C. They are alternate interior angles and have equal measures.
D. They are vertical angles and share a vertex.

9. Two adjacent angles form a straight line. Their measures are $x + 37$ and $2x + 8$, in degrees. How large is the larger angle?

A. 98°
B. 82°
C. 45°
D. 135°

10. A triangle’s angles at A and B measure 57° and 68°. A side is extended at C to make the exterior angle next to the interior angle at C. How large is the exterior angle?

A. 180°
B. 55°
C. 113°
D. 125°

11. Two complementary angles are in a 2-to-3 ratio. What is the measure of the smaller one?

A. 45°
B. 30°
C. 36°
D. 54°

12. A transversal makes a pair of same-side interior angles of 3x + 12 degrees and 2x + 3 degrees. The crossed lines are parallel. What is x?

A. 3
B. 33
C. 15
D. 39

13. Four adjacent angles fit exactly around a point. They measure x, 2x, 3x and 4x degrees. What is the measure of the largest angle?

A. 180°
B. 90°
C. 108°
D. 144°

14. Someone traces the perimeter of a regular polygon. At every corner they turn through the same exterior angle of 24°. How many sides does the polygon have?

A. 15
B. 12
C. 18
D. 24

15. An exterior angle at C in a triangle measures 142°. Interior angle B is 18° larger than interior angle A. What are the measures of A and B, in that order?

A. 71° and 71°
B. 80° and 62°
C. 62° and 80°
D. 52° and 70°