Angles: Classification and Properties

Answer Key

1. Answer: B

Explanation: ∠1 and ∠5 are corresponding angles since they are on the same side (left of the transversal line) and have the same figure. Corresponding angles are congruent angles. So, if m∠1 = 110°, then m∠5 = 110°.

2. Answer: A

Explanation: From the previous item, we have determined that m∠5 = 110°. We can obtain the measurement of ∠6 using ∠5. If you take a look at the given figure again, notice that angles ∠5 and ∠6 are linear pairs since these angles share a common side and their remaining sides form straight line. Linear pairs are supplementary or have a sum equivalent to 180°.

Since, m∠5 = 110°, then we can obtain m∠6 by subtracting 110° from 180°.

m∠6 = 180° - m∠5
m∠6 = 180° - 110°
m∠6 = 70°

Hence, m∠6 = 70°

3. Answer: A

Explanation: The only true statements among the given are only statements I and III. The reason why statements II and IV are false are listed below:

- Statement II is false since vertical angles are congruent and not supplementary
- Statement IV is false since the measurement of an acute angle is any number between 0° and 90° and not 0° and 45°

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4. Answer: A
To find the supplement of a 50-degree angle, we just need to subtract 50 degrees from 180 degrees:
180 - 50 = 30 degrees.

This means that the supplement of a 50-degree angle is a 30-degree angle.

Now, let us determine the complement of a 30-degree angle. To do this, we just need to subtract 30 degrees from 90 degrees:

90 - 30 = 60 degrees.

Thus, the answer to this problem is 60 degrees.

5. Answer: C

Explanation: The formula for the sum of the measurements of the interior angles of a regular polygon is defined as:

Sum of the measurements of the interior angles interior angles of a polygon = 180(n - 2)°

By substituting n = 50 to the formula:

180(50 - 2) = 180(48) = 8640

Therefore, the answer is 8640°.