



## Angles: Classification and Properties

Answer Key

1. Answer: B

**Explanation:**  $\angle 1$  and  $\angle 5$  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  $m\angle 1 = 110^\circ$ , then  $m\angle 5 = 110^\circ$ .

2. Answer: A

**Explanation:** From the previous item, we have determined that  $m\angle 5 = 110^\circ$ . We can obtain the measurement of  $\angle 6$  using  $\angle 5$ . If you take a look at the given figure again, notice that angles  $\angle 5$  and  $\angle 6$  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  $180^\circ$ .

Since,  $m\angle 5 = 110^\circ$ , then we can obtain  $m\angle 6$  by subtracting  $110^\circ$  from  $180^\circ$ .

$$m\angle 6 = 180^\circ - m\angle 5$$

$$m\angle 6 = 180^\circ - 110^\circ$$

$$m\angle 6 = 70^\circ$$

Hence,  $m\angle 6 = 70^\circ$

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  $0^\circ$  and  $90^\circ$  and not  $0^\circ$  and  $45^\circ$



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### 4. Answer: C

To find the complement of a 50-degree angle, we just need to subtract 50 degrees from 90 degrees:

$$90 - 50 = 40 \text{ degrees.}$$

This means that the complement of a 50-degree angle is a 40-degree angle.

Now, let us determine the supplement of a 40-degree angle. To do this, we just need to subtract 40 degrees from 180 degrees:

$$180 - 40 = 140 \text{ degrees.}$$

Thus, the answer to this problem is 140 degrees.

### 5. Answer: C

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

$$\text{Sum of the measurements of the interior angles of a polygon} = 180(n - 2)^\circ$$

By substituting  $n = 50$  to the formula:

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

Therefore, the answer is 8640°.



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