Warm-up Activity

Refer to the figure for Questions 1–3.

1. Name two acute vertical angles.
2. Name a linear pair whose vertex is E.
3. Name an angle supplementary to $\angle BEC$.

4. **Standardized Test Practice** If two angles are both congruent and supplementary, they must be ______.
   - A. two right angles
   - B. two acute angles
   - C. two obtuse angles
   - D. an obtuse and an acute angle

1-5B Complementary & Supplementary Word Problems

- define your variables
- write an equation using your defined variables.
- solve for the angle and its complement/supplement.
- check sum and check within problem.
Examples: Write an equation and solve the following word problems.

1. Find the measure of two supplementary angles if the angle is twice the measure of its supplement.

\[ \frac{180^\circ}{X} = 2 \]

\[ X = 2(180 - x) \]

\[ X = 360 - 2x \]

\[ 2x = 360 \]

\[ x = 120^\circ \]

2. Find the measure of two complementary angles if the difference of the measures is 12.

\[ \frac{90^\circ}{x} = (90 - x) \]

\[ 90 - 2x = 12 \]

\[ -90 \]

\[ -12x = -78 \]

\[ x = 39^\circ \]
Examples: Write an equation and solve the following word problems.

3. Find the measure of two supplementary angles if the measure of one angle is 6 less than five times the measure of the other angle.

\[ x = \text{1st angle} \]
\[ (180 - x) = \text{other angle} \]

\[ 5(180 - x) - 6 \]
\[ x = 149 \text{ and } 51 \]

1-5B Worksheet