complementary = a pair of angles that add up to 90 degrees
supplementary = a pair of angles that add up to 180 degrees

**Practice 6.1**

Tell whether each pair of angles is complementary.

1. $m\angle A = 25^\circ$ and $m\angle B = 65^\circ$
2. $m\angle C = 105^\circ$ and $m\angle D = 7^\circ$
3. $m\angle E = 112^\circ$ and $m\angle F = 68^\circ$
4. $m\angle G = 45^\circ$ and $m\angle H = 45^\circ$

Tell whether each pair of angles is supplementary.

5. $m\angle A = 130^\circ$ and $m\angle B = 50^\circ$
6. $m\angle C = 90^\circ$ and $m\angle D = 80^\circ$
7. $m\angle E = 120^\circ$ and $m\angle F = 60^\circ$
8. $m\angle G = 60^\circ$ and $m\angle H = 30^\circ$
Find the measure of the complement of the angle with the given measure.

9. 19°  
\[ 90 - 19 \]

10. 64°  
\[ 90 - 64 \]

Find the measure of the supplement of the angle with the given measure.

13. 78°  
\[ 180 - 78 \]

14. 4°  
\[ 180 - 4 \]
\( \angle ABD \) and \( \angle DBC \) are complementary angles. Find the value of \( x \).

\[ x + 65 = 90 \]
\[ x = 25 \]

\( \angle POS \) and \( \angle SQR \) are supplementary angles. Find the value of \( m \).

\[ 129 + m = 180 \]
Answer each of the following.

21 The measure of an angle is 7°. Find the measure of its complement. 83°

22 The measure of an angle is 84°. Find the measure of its supplement.

180° - 84° =

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a) Find the measures of the complement and the supplement of each of the following angles, where possible.

\[ \text{m}\angle W = 2° \quad \text{m}\angle X = 40° \quad \text{m}\angle Y = 32° \quad \text{m}\angle Z = 115° \]

88° 178° 50° 140° 58° 148° none 65°

b) Which angle in a) does not have both a complement and a supplement? \( \neq \) Z

c) In general, what must be true about the measure of an angle that has both a complement and a supplement? It must be \( \leq 90° \)
Math Journal: Identify all the angles in each diagram. Tell which angles are adjacent. Explain your reasoning.

Naming angles:

- \( \angle GOK \) or \( \angle KOG \)
- \( \angle GOH \) or \( \angle HOG \)
- \( \angle KOH \) or \( \angle HOK \)

Adjacent angles:

- \( \angle WOX \) and \( \angle XOY \)
- \( \angle YOZ \) and \( \angle WOZ \)
- \( \angle WDY \) and \( \angle XOZ \)

Not adjacent:

- \( \angle WOX \) and \( \angle WOY \)
- \( \angle XOY \) and \( \angle XOZ \)
The measure of \( \angle ABC = 90^\circ \). Find the value of \( x \).

\[
\begin{align*}
x + 42 + 30 &= 90 \\
x + 72 &= 90 \\
x &= 18
\end{align*}
\]
$PR$ is a straight line. Find the value of $m$.

\[
49 + m + 57 = 180
\]

In the diagram, the ratio $a : b = 2 : 3$. Find the values of $a$ and $b$.

\[
a = 36 \\
b = 54
\]
Solve.

The diagram shows the pattern on a stained glass window. $\overline{AC}$ is a straight line. $\angle EBD$ and $\angle DBA$ are complementary angles and $m\angle DBA = 30^\circ$. Find the measures of $\angle EBD$ and $\angle CBD$. 

![Diagram](image_url)