Utah State Standards
1.2.a Use accepted geometric notation for rays, angles.
1.5.b Copy and bisect angles using constructions.
1.5.d Justify procedures used to construct geometric figures.
4.1.a Find angle measures in real-world situations using appropriate tools or technology.

**Angle Addition**

\[ \angle 1 + \angle 2 = \angle CDE \]

Draw an angle with vertex Q and a point H in its interior. Draw a ray from Q through H.

**Practice. P.108 #7-8**

**Congruent Angles**

**Diagram**

**Notation**

Ex. Finding Angle Measure with algebra.

Given: \( \angle ABC \cong \angle DBF \)
\[ m\angle ABC = 6x + 2 \]
\[ m\angle DBF = 8x - 14 \]

Find \( x \)

\[
\begin{align*}
6x + 2 &= 8x - 14 \\
6x - 8x &= -14 - 2 \\
-x &= -16 \\
x &= 16 \\
\frac{x}{2} &= 8 \\
x &= 8
\end{align*}
\]
Angle bisector: A ray that divides an angle into 2 equal parts.

$m \angle 1 = m \angle 2$

$\overrightarrow{AB}$ is a bisector.

An angle bisector creates two equal angles.

Practice.

$\overrightarrow{QP}$ and $\overrightarrow{QR}$ are opposite rays. $\overrightarrow{QT}$ bisects $\angle QOS$

If $m \angle QOT = 6x + 5$ and $m \angle SQT = 7x - 2$.

Find $m \angle QOT$.

$$\begin{align*}
7x - 2 &= 6x + 5 \\
-x &= 3 \\
x &= 7
\end{align*}$$

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