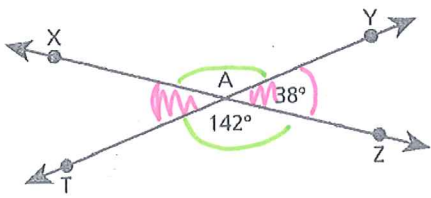# Angle Relationships: Notes Day 1
Justifications

Key

Justification: *Vertical angles are congruent!*

1. Name the vertical angles which are congruent. Find m<XAY and m<XAT.

$<XAT \cong <YAZ$ vertical <'s are $\cong$

$\boxed{<XAT = 38°}$

$<XAY \cong <ZAT$ vertical <s are $\cong$

$\boxed{<XAY = 142°}$

2. What is an angle bisector? __Cuts an $\angle$ into 2 $\cong$ parts ($\angle$s)__

$\vec{CB}$ is an angle bisector. If m<BCD = 35° find m<ACB.

Justification: *Definition of Angle Bisector*
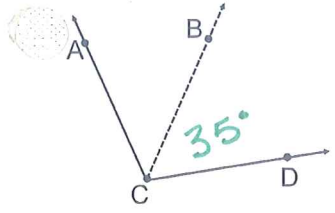
$<BCD \cong <ACB$ def of < bisector

$\boxed{35° = <ACB}$

3. Use the same figure, but DO NOT assume Ray CB is an angle bisector: If $m<ACB=64°$ and $m<BCD=33°$ find the $m<ACD$.

Justification: *Angle Addition*

$<ACB + <BCD = <ACD$ angle addition

$64 + 33 = <ACD$

$97° = <ACD$
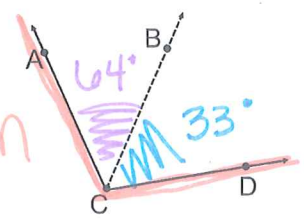
4. Linear Pairs. Find m<AVB.
Justification: *Linear Pairs are Supplementary*
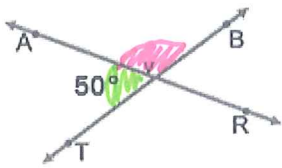
$\angle AVT + \angle AVB = 180°$ linear pairs are suppl.

$50° + \angle AVB = 180°$

$\angle AVB = 130°$

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5. Draw $\overleftrightarrow{FR} \perp \overleftrightarrow{EB}$ which intersect at X. Find x.
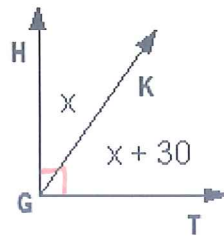***Justification:*** *Definition of Perpendicular*

$x + 9$
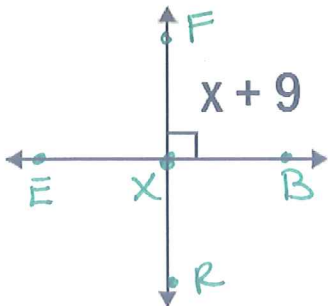
$m\angle FXB = 90°$ def of $\perp$

$x + 9 = 90°$

$x = 81°$

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6. Draw $< HGT$ as a right angle. Find x.
Justification: *Definition of Right Angle*

$x + 30$

$\angle HGT = 90°$ def of RT$\angle$

$\angle HGK + \angle KGT = \angle HGT$ $\angle$ add

$x + x + 30 = 90$

$2x + 30 = 90$

$2x = 60$

$x = 30°$

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7. Draw < 1 & < 2 as complementary angles.
Justification: *Definition of Complementary Angle*
If <1 and <2 are complimentary angles and $m<1 = 78°$, find the m<2.

$<1 + <2 = 90°$ def of compl.

$78° + <2 = 90°$

$<2 = 12°$

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8. Draw < 1 & < 2 as supplementary angles.
Justification: *Definition of Supplementary Angle*
If <1 and <2 are supplementary angles and $m<1 = 78°$, find the m<2.

$<1 + <2 = 180°$ def of Suppl.

$78 + <2 = 180°$

$<2 = 102°$