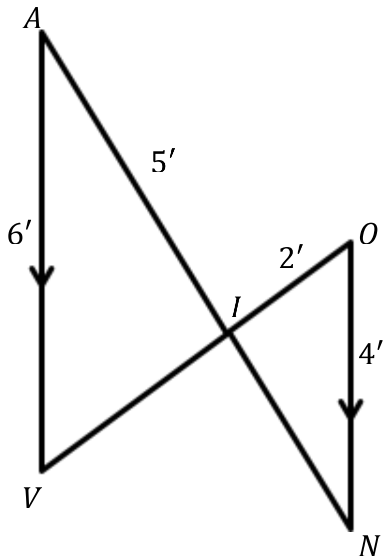
Name ____ Date______________

Triangles – Part 2
Triangle Similarity – Part 2
Mini Assessment

1. Consider the figure below.



Part A: Select all the statements that are enough to prove $\triangle AVI \sim \triangle NOI$.

- ☐ The sides of $\triangle AVI$ and $\triangle NOI$ are proportional. Hence, $\triangle AVI \sim \triangle NOI$ by the SSS Similarity Criterion.
- ☐ There are two pairs of sides that are proportional, $\overline{AV}$ and $\overline{NO}$, and $\overline{AI}$ and $\overline{OI}$. By Vertical Angles Theorem, $\angle VIA \cong \angle OIN$. Hence, $\triangle AVI \sim \triangle NOI$ by the SAS Similarity Criterion.
- ☐ Because $\overline{AV} \cong \overline{NO}$ and $\angle VIA \cong \angle OIN$ by Vertical Angles Theorem, $\angle AVI \cong \angle NOI$ by CPCTC. Hence, $\triangle AVI \sim \triangle NOI$ by the AAS Similarity Criterion.
- ☐ Because $\overline{AV} \cong \overline{NO}$, the other two sides $\triangle AVI$ and $\triangle NOI$ are proportional. Hence, $\triangle AVI \sim \triangle NOI$ by the SSS Similarity Criterion.
- ☐ Because $\overline{AV} \parallel \overline{NO}$, $\angle AVI \cong \angle NOI$, and $\angle IAV \cong \angle INO$ by Alternate Interior Angle Theorem. Hence, $\triangle AVI \sim \triangle NOI$ by the AA Similarity Criterion.
- ☐ Because $\overline{AV} \parallel \overline{NO}$, $\angle IAV \cong \angle INO$ by Alternate Interior Angle Theorem. By Vertical Angles Theorem, $\angle VIA \cong \angle OIN$. Hence, $\triangle AVI \sim \triangle NOI$ by the AA Similarity Criterion.

Part B: Determine the length of $\overline{NI}$ and $\overline{VI}$.

$NI =$ ☐ and $VI =$ ☐ .