3-59 a) yes, by \( AKI \equiv \) since \( mL A = mL T \) and \( mL B = mL P \).

b) yes

c) \( \frac{12}{3} = 4 \), \( \frac{8}{2} = 4 \), \( \frac{16}{4} = 4 \) 

\( \triangle CDF \sim \triangle RTQ \)

3-60 a) yes, \( SSS \) becomes \( \frac{16}{4} = \frac{12}{3} = \frac{8}{2} \)

b) \( \frac{12}{3} = 4 \), \( \frac{8}{2} = 4 \), \( \frac{16}{4} = 4 \) 

\( 4 = 4 = 4 \)

4d) \( \frac{12}{3} = 4 \)

\( \frac{8}{2} = 4 \)

\( \frac{16}{4} = 4 \)

\( \triangle CDF \sim \triangle RTQ \)

3-61 a) \( \frac{PO}{CA} = \frac{12}{8} = \frac{3}{2} \approx 1.5 \)

b) \( \frac{6E}{AT} = \frac{6}{4} = \frac{3}{2} = 1.5 \)

\( \triangle CAT \sim \triangle PGJ \)

\( \angle CAT = \angle PGJ \)

3-62 a) \( \triangle CAT \sim \triangle PGJ \)

b) \( \frac{CT}{PG} = \frac{CA}{PG} \)

\( \frac{12}{12} = 1 \)

\( \frac{12}{12} = 1 \)

\( \frac{12}{12} = 1 \)

\( \frac{12}{12} = 1 \)

3-62 a) 

b) \( \triangle CAT \sim \triangle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)

\( \angle CAT = \angle PGJ \)
3. 2.21  (continued)

3-63. a) $\overline{LD}$ and $\overline{KN}$ correspond with $\overline{AC}$ and $\overline{AB}$, respectively. 

\[ \frac{295.4}{126.6} = \frac{x}{3} = 2.33 \]

\[ mL = mL' \]

\[ \frac{1025.5}{439.5} = \frac{7}{3} = 2.33 \]

c) Yes, by SAS.

3-64 Using flow charts.

Each fact should have an oval and any conclusion drawn from those facts should appear in an oval, any reasons appear outside the oval and the answer point you in the direction of proof, i.e., the fact leads to the conclusion of proof. See 3-54 & 3-55 for example.

3-65 a) $\overline{ABCD} \approx \overline{JKLM}$

\[ \frac{x}{12} = \frac{10}{6} \]

\[ 6x = 120 \]

\[ x = 20 \text{ mm} \]

b) $\overline{MNP} \approx \overline{XYZ}$

\[ \frac{39}{3} = \frac{3w}{3} \]

\[ 3w = 39 \]

\[ w = 9.1 \text{ mm} \]

3-66 a) Not possible

\[ 5^2 + 14^2 \neq 20^2 \]

b) Possible, not parallel.

\[ 5 + 14 < 20 \] end the $\triangle$. 

c) Not possible unless 590 + 630 + 570 = 1790

and $\angle D$ must sum to 180°!

3-69 a) Reflection, rotation & translation (can skip translation if)

b) Rotation & translation

C) Rotation, reflected by reflecting 2 & translation

d) Rotation, reflect & reduced by reflecting $y = \frac{1}{2}$, or $\triangle$ translation, multiple reflection.
3-70 a) Possible

b) Not possible; on obtuse $x +$ right $x$ would sum to be greater than 180°

c) Not possible; a triangle with side $x$ equal length cannot also have side $x$ by different length.

d) Possible