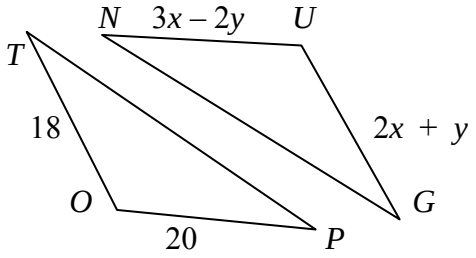
Geometry Name_____
Handout 4A
4-2, 4-3

Do these problems on your own paper. Solve using algebra.

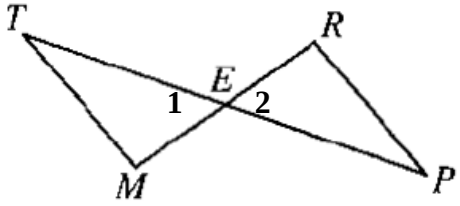
1. Given: $\Delta BIG \cong \Delta MAC$, $BI = 31$, $IG = 58$, $BG = 45$, $MA = 2x - 5$, and $MC = 7y + 10$.
Find x and y.

2. Given: $\Delta TOP \cong \Delta GUN$. Find x and y.



Copy given, prove and figure for <u>each</u> problem on your own paper. Then do a complete and logical proof.

Figure for #3-5

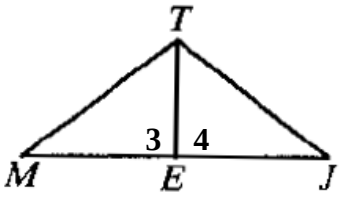


3. Given: $\overline{TE} \cong \overline{PE}$, $\overline{ME} \cong \overline{RE}$
Prove: $\Delta TEM \cong \Delta PER$

4. Given: $\overline{TM} \parallel \overline{RP}$, $\overline{ME} \cong \overline{RE}$
Prove: $\Delta TEM \cong \Delta PER$

5. Given: E is the midpoint of $\overline{MR}$ and $\overline{TP}$
Prove: $\angle T \cong \angle P$

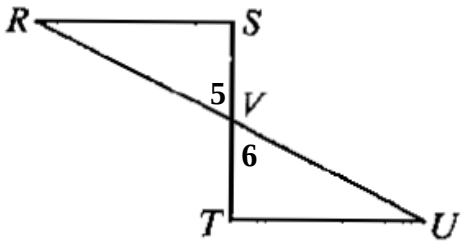
figure for #6-7



6. Given: E is the midpoint of $\overline{MJ}$, $\overline{MT} \cong \overline{JT}$
Prove: $\Delta MET \cong \Delta JET$

7. Given: $\angle 3$ and $\angle 4$ are right $\angle$s, $\overline{TE}$ bisects $\overline{MJ}$
Prove: $\overline{TM} \cong \overline{TJ}$

figure for #8-9



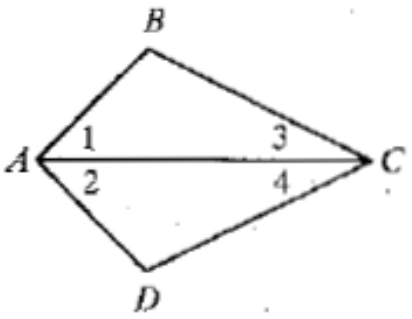
8. Given: $\overline{RS} \perp \overline{SV}$, $\overline{UT} \perp \overline{TV}$, V is the midpoint of $\overline{ST}$
Prove: $\Delta SRV \cong \Delta TUV$

9. Given: $\overline{RS} \parallel \overline{TU}$, $\overline{ST}$ bisects $\overline{RU}$
Prove: $\overline{RS} \cong \overline{UT}$

10. Given: $\overline{AC}$ bisects $\angle BAD$ and $\angle BCD$
Prove: $\Delta ABC \cong \Delta ADC$

11. Given: $\overline{AB} \cong \overline{AD}$, $\overline{BC} \cong \overline{DC}$
Prove: $\overline{AC}$ bisects $\angle BAD$

figure for #10-11

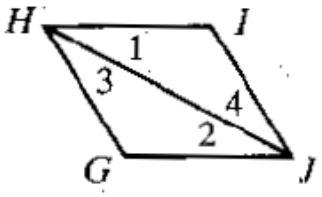


12. Given: $\overline{HI} \cong \overline{JG}$, $\overline{HI} \parallel \overline{GJ}$
Prove: $\Delta HIJ \cong \Delta JGH$

13. Given: $\overline{HI} \parallel \overline{GJ}$, $\overline{HG} \parallel \overline{IJ}$
Prove: $\Delta HIJ \cong \Delta JGH$

14. Given: $\overline{HI} \cong \overline{JG}$, $\overline{HG} \cong \overline{JI}$
Prove: $\overline{HI} \parallel \overline{GJ}$

figure for #12-14



15. Given: $\overline{AD} \parallel \overline{ME}$, $\overline{MD} \parallel \overline{BE}$,
M is the midpoint of $\overline{AB}$
Prove: $\overline{DA} \cong \overline{EM}$

figure for #15