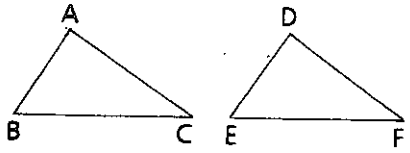
Mon 9/4

Part Three: Problem Sets

Problem Set A

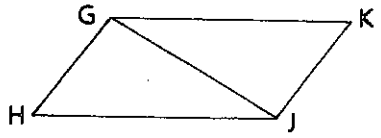
1 Given: $\overline{AB} \cong \overline{DE}$, $\overline{BC} \cong \overline{EF}$, $\overline{AC} \cong \overline{DF}$

Prove: $\angle A \cong \angle D$



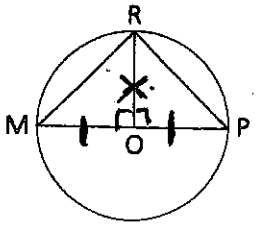
2 Given: $\angle HGJ \cong \angle KJG$, $\angle KGJ \cong \angle HJG$

Conclusion: $\overline{HG} \cong \overline{KJ}$



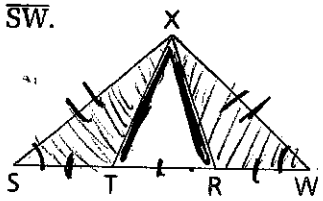
3 Given: $\odot O$, $\overline{RO} \perp \overline{MP}$

Prove: $\overline{MR} \cong \overline{PR}$



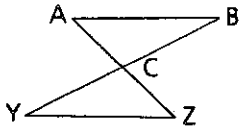
4 Given: T and R trisect $\overline{SW}$. $\overline{XS} \cong \overline{XW}$, $\angle S \cong \angle W$

Prove: $\overline{XT} \cong \overline{XR}$



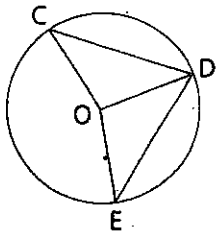
5 Given: $\angle B \cong \angle Y$; C is the midpt. of $\overline{BY}$.

Conclusion: $\overline{AB} \cong \overline{YZ}$



6 Given: $\odot O$, $\overline{CD} \cong \overline{DE}$

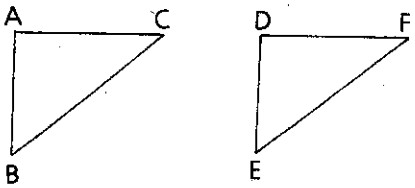
Prove: $\angle COD \cong \angle DOE$



7 Find, to the nearest tenth, the area and the circumference of a circle whose radius is 12.5 cm.

8 $\triangle ABC \cong \triangle DEF$, $\angle A = 90°$, $\angle B = 50°$, $\angle C = 40°$, $m\angle E = 12x + 30$, $m\angle F = \frac{y}{2} - 10$, $m\angle D = \sqrt{z}$

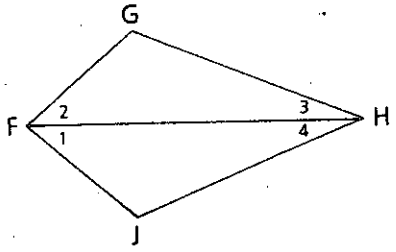
Solve for x, y, and z.



Problem Set A, *continued*

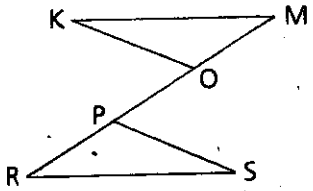
9 Given: $\overleftrightarrow{FH}$ bisects $\angle GFJ$ and $\angle GHJ$.

Conclusion: $\overline{FG} \cong \overline{FJ}$



10 Given: $\angle M \cong \angle R$,
$\angle RPS \cong \angle MOK$,
$\overline{MP} \cong \overline{RO}$

Conclusion: $\overline{KM} \cong \overline{RS}$

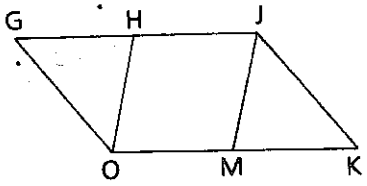


11 Explain why the area of the shaded region is $100 - 25\pi$.

Problem Set B

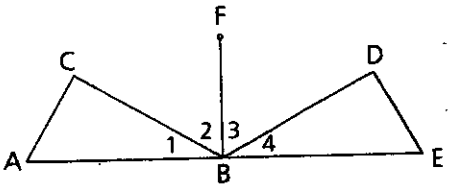
12 Given: H is the midpt. of $\overline{GJ}$.
M is the midpt. of $\overline{OK}$.
$\overline{GO} \cong \overline{JK}$,
$\overline{GJ} \cong \overline{OK}$,
$\angle G \cong \angle K$,
$OK = 27$,
$m\angle GOH = x + 24$, $m\angle GHO = 2y - 7$,
$m\angle JMK = 3y - 23$, $m\angle MJK = 4x - 105$

Find: $m\angle GOH$, $m\angle GHO$, and GH



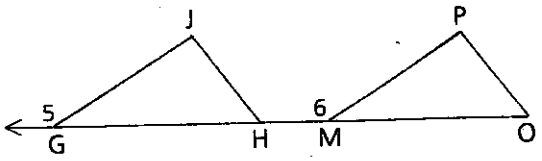
13 Given: $\angle A \cong \angle E$,
$\overline{AB} \cong \overline{BE}$,
$\overline{FB} \perp \overline{AE}$,
$\angle 2 \cong \angle 3$

Prove: $\overline{CB} \cong \overline{DB}$

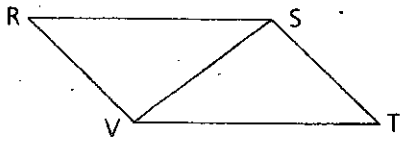


14 Given: $\angle 5 \cong \angle 6$,
$\angle JHG \cong \angle O$,
$\overline{GH} \cong \overline{MO}$

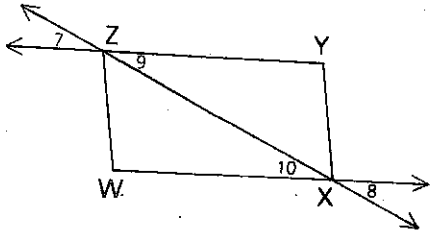
Conclusion: $\angle J \cong \angle P$



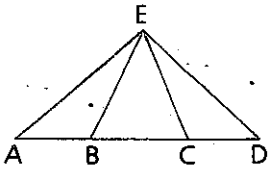
15 Given: $\angle RST \cong \angle RVT$,
$\angle RVS \cong \angle TSV$
Conclusion: $\overline{RS} \cong \overline{VT}$



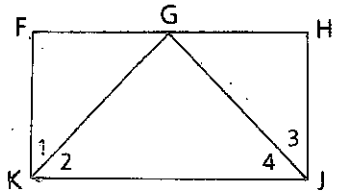
16 Given: $\angle 7 \cong \angle 8$,
$\overline{ZY} \cong \overline{WX}$
Prove: $\angle W \cong \angle Y$



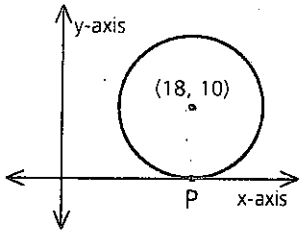
17 Given: $\angle AEC \cong \angle DEB$,
$\overline{BE} \cong \overline{CE}$,
$\angle ABE \cong \angle DCE$
Prove: $\overline{AB} \cong \overline{CD}$



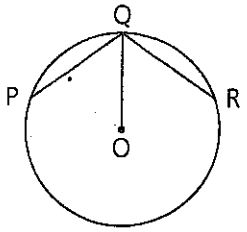
18 Given: $\overline{KG} \cong \overline{GJ}$,
$\angle 2 \cong \angle 4$,
$\angle 1$ is comp. to $\angle 2$.
$\angle 3$ is comp. to $\angle 4$.
$\angle FGJ \cong \angle HGK$
Conclusion: $\overline{FG} \cong \overline{HG}$



19 **a** Find the coordinates of point P.
b Find the area of the circle.



20 Given: $\odot O$,
$\overline{PQ} \cong \overline{QR}$
Prove: $\overrightarrow{QO}$ bisects $\angle PQR$.



Problem Set C

21 Given: $\overline{AE} \cong \overline{FC}$,
$\overline{FB} \cong \overline{DE}$,
$\angle CFB \cong \angle AED$
Prove: $\angle 1 \cong \angle 2$