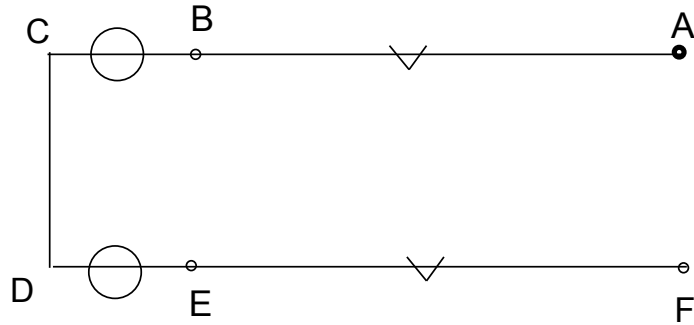
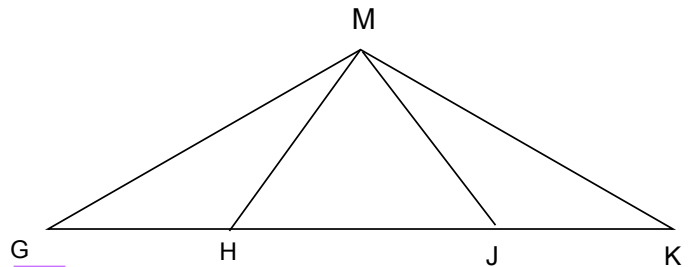


Applications of New Theorems

- 1) Given: $\overline{AB} \cong \overline{FE}$
 $\overline{BC} \cong \overline{ED}$
 Prove: $\overline{AC} \cong \overline{FD}$

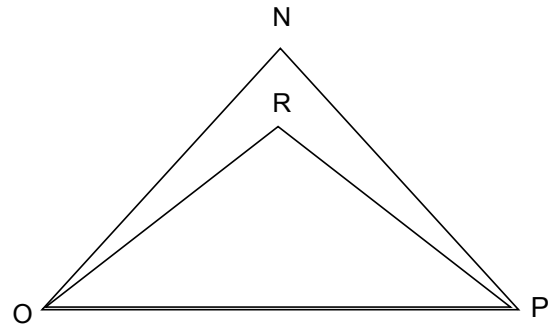


Statement	Reason
1) a. b.	1)
2) a. b.	2)
3)	3)



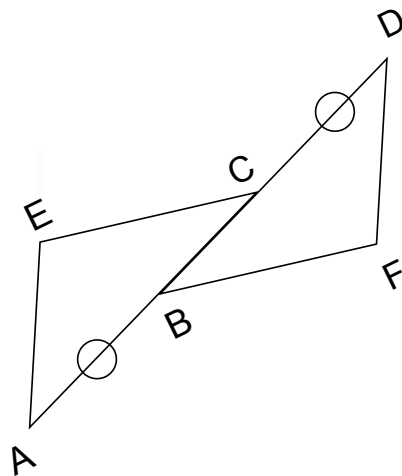
- 2) Given: $\overline{GH} \cong \overline{HK}$
 Can you conclude $\overline{GH} \cong \overline{JK}$?
 Based on which theorem?

- 3) Given: $\angle NOP \cong \angle NPO$
 $\angle ROP \cong \angle RPO$
 Prove: $\angle NOR \cong \angle NPR$

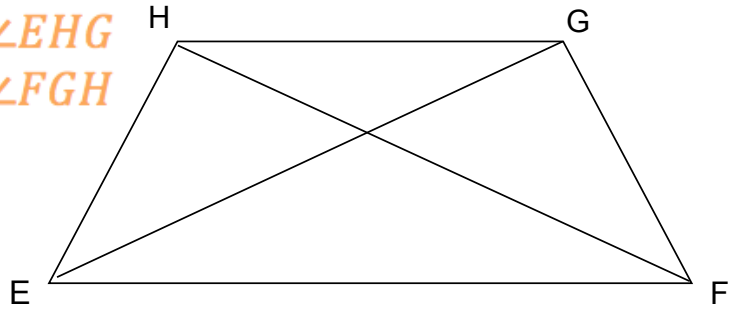


Statement	Reason
1) a. b.	1)
2) a. b.	2)
3)	3)

- 4) Given: $\overline{AB} \cong \overline{CD}$
 What can you conclude?
 Based on which theorem?



- 5) Given: $\angle HEF$ is supp. to $\angle EHG$
 $\angle GFE$ is supp. to $\angle FGH$
 $\angle EHF \cong \angle FGE$
 $\angle GHF \cong \angle HGE$
 Prove: $\angle HEF \cong \angle GFE$

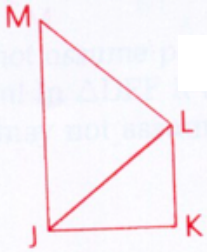


Statement	Reason
1) a. b. c. d.	1)
2) a. b.	2)
3)	3)
4)	4)

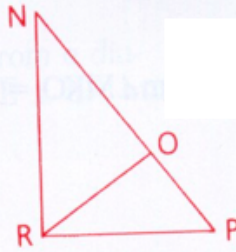
2.1

2 In each of the following, name the angles that can be proved to be right angles.

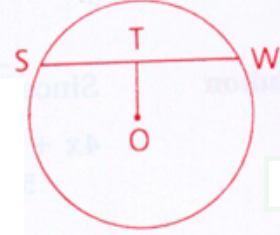
a Given: $\overline{JM} \perp \overline{JK}$



b Given: $\overrightarrow{RO} \perp \overrightarrow{PN}$

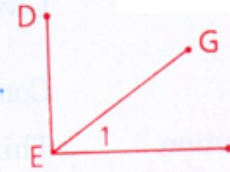


c Given: $\overline{OT} \perp \overline{SW}$

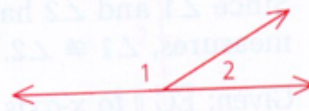


3 In each of the following, find the measure of $\angle 1$.

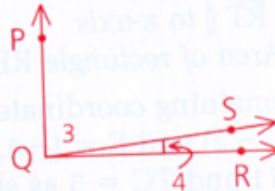
b $\overleftrightarrow{DE} \perp \overleftrightarrow{EF}$;
 \overleftrightarrow{EG} bisects $\angle DEF$.



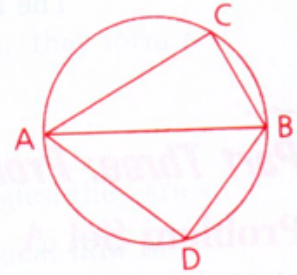
4 a $\angle 1$ is five times as large as $\angle 2$. Find $m\angle 2$.



b $\angle 3$ is 72 times as large as $\angle 4$, and $\overleftrightarrow{PQ} \perp \overleftrightarrow{QR}$. Find $m\angle 4$ to the nearest tenth. (Hint: Use a calculator to do the arithmetic.)

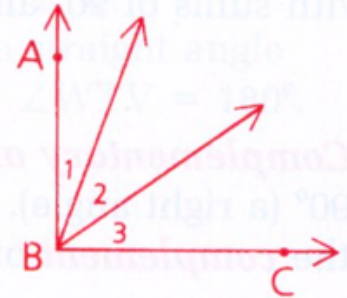


- 7 Given: $\angle ACB = 90^\circ$,
 $\overline{AD} \perp \overline{BD}$
- Prove: $\angle C \cong \angle D$ (Hint: This proof takes more than three steps.)



Problem Set B

- 11 $\overleftrightarrow{AB} \perp \overleftrightarrow{BC}$ and angles 1, 2, and 3 are in the ratio 1:2:3. Find the measure of each angle. 15; 30; 45



2.2

2 What is the supplement of a 70° angle?

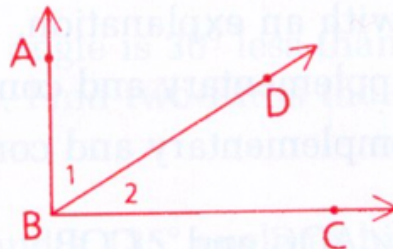
3 $\angle 1$ is complementary to $\angle 3$. If $\angle 3 = y^\circ$, how large is $\angle 1$?

5 One of two complementary angles is twice the other. Find the measures of the angles.

6 Copy the figure and the proof below. Then complete the proof by filling in the missing statements.

Given: $\angle 1$ is comp. to $\angle 2$.

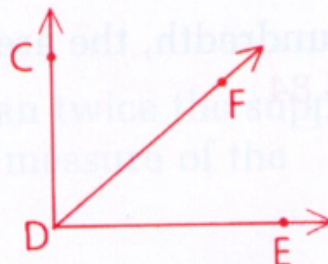
Prove: $\overleftrightarrow{AB} \perp \overleftrightarrow{BC}$



Statements	Reasons
1 _____	1 Given
2 _____	2 If a ray divides an \angle into two comp. \angle s, then the original \angle is a right \angle .
3 _____	3 If two lines intersect to form a right \angle , the two lines are \perp .

7 Given: $\overleftrightarrow{CD} \perp \overleftrightarrow{DE}$

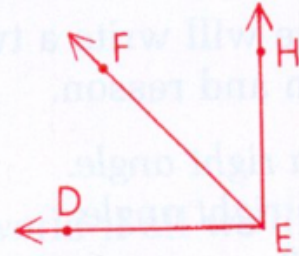
Prove: $\angle CDF$ is comp. to $\angle FDE$. (Hint: This proof takes more than two steps.)



2.3

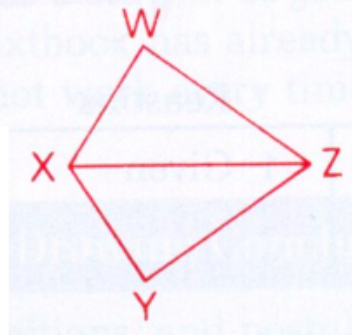
2 Given: $\angle DEF$ is comp. to $\angle HEF$.

Conclusion: ?



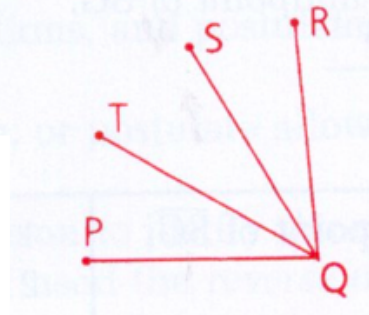
3 Given: $\angle WXZ \cong \angle YXZ$

Conclusion: ?



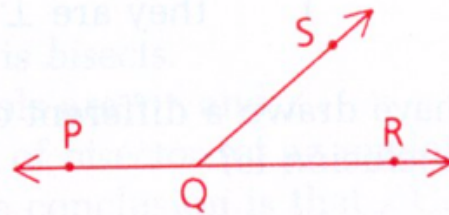
4 Given: \overrightarrow{QS} and \overrightarrow{QT} trisect $\angle PQR$.

Conclusion: ?



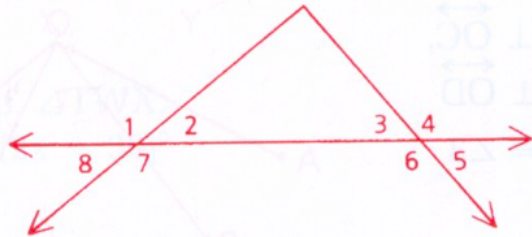
7 Given: Diagram as shown

Conclusion: ?



2.4

1 Given: $\angle 2$ is comp. to $\angle 3$.
 $\angle 4 = 131^\circ$



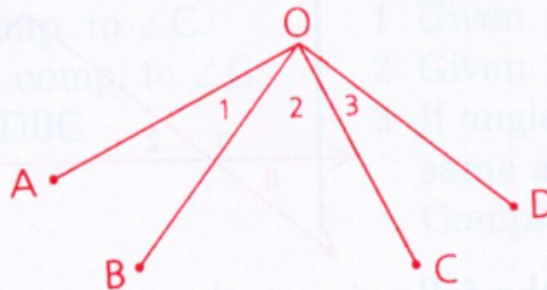
Find the measure of each of the following angles.

- | | | | |
|-----------------------------------|--------------|--------------|--------------|
| a $\angle 3$ <input type="text"/> | c $\angle 5$ | e $\angle 1$ | g $\angle 7$ |
| b $\angle 6$ <input type="text"/> | d $\angle 2$ | f $\angle 8$ | |

4 One of two supplementary angles is four times the other. Find the larger angle.

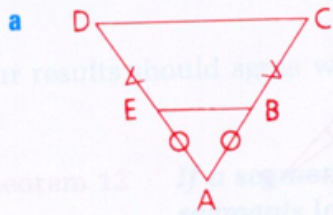
5 One of two complementary angles is 20° larger than the other. Find the measure of each.

10 Given: $\overleftrightarrow{OA} \perp \overleftrightarrow{OC}$,
 $\overleftrightarrow{OB} \perp \overleftrightarrow{OD}$
 Prove: $\angle 1 \cong \angle 3$

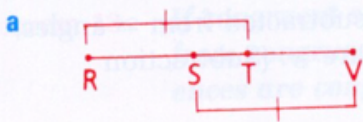


2.5

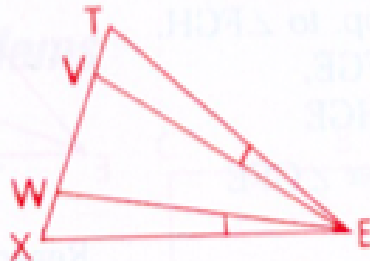
1 Name the angles or segments that are congruent by the Addition Property.



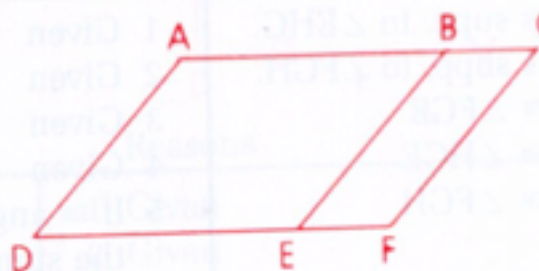
2 Name the angles or segments that are congruent by the Subtraction Property.



4 Given: $\angle TEV \cong \angle XEW$
 Prove: $\angle TEW \cong \angle XEV$



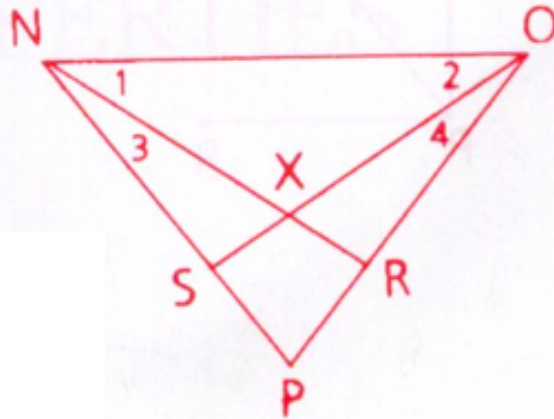
5 Given: $\overline{AC} \cong \overline{DF}$,
 $\overline{BC} \cong \overline{EF}$
 Prove: $\overline{AB} \cong \overline{DE}$



7 Given: $\angle PNO \cong \angle PON$,

$$\angle 1 \cong \angle 2$$

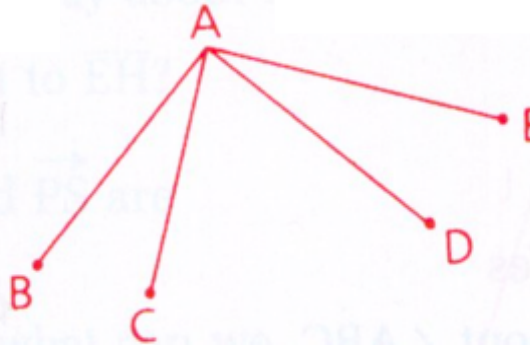
Conclusion: ?



10 Given: $\angle BAD$ is a right \angle .

$$\overline{CA} \perp \overline{AE}$$

Prove: $\angle BAC \cong \angle EAD$



12 Given: J and K are trisection points of \overline{HM} .

$$\overline{GH} \cong \overline{MO}$$

Conclusion: $\overline{GJ} \cong \overline{KO}$

