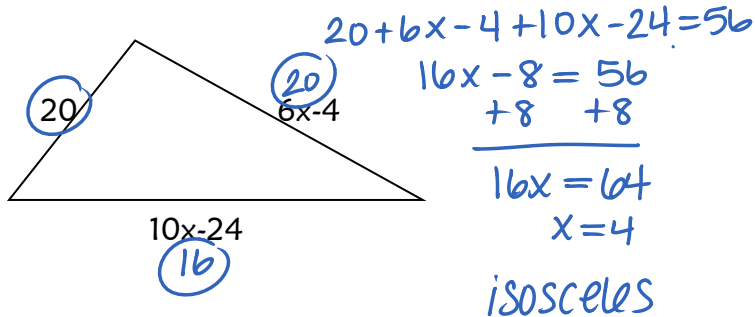


CHAPTER 4 STUDY GUIDE

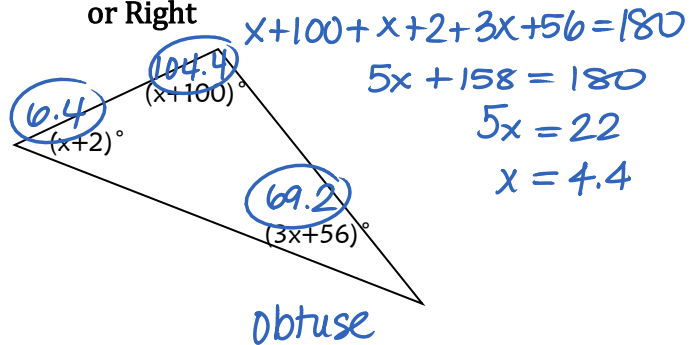
Name Key

Section 4.2 Classify triangles by sides and angles.

1. Classify the triangle as **Scalene, Isosceles, or Equilateral**
The perimeter of the triangle is 56.

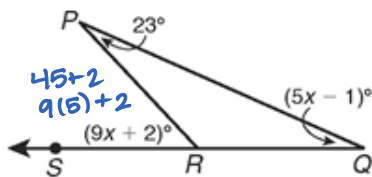


2. Classify the triangle as **Obtuse, Acute, or Right**



Section 4.3 Exterior Angle Theorem

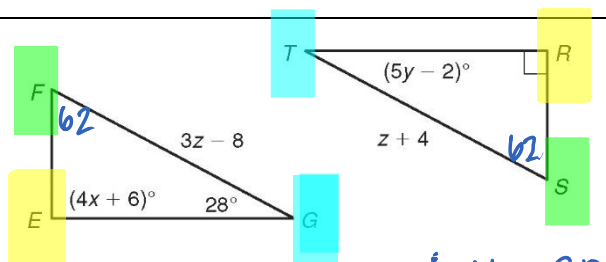
3. $m\angle PRS = 47^\circ$



$9x + 2 = 5x - 1 + 23$
 $9x + 2 = 5x + 22$
 $4x = 20$
 $\frac{4x}{4} = \frac{20}{4}$
 $x = 5$

Section 4.4 Congruent Triangles

Given: $\triangle EFG \cong \triangle RST$. Find each value below.



4. $x = 21$

5. $y = 6$

6. $m\angle F = 62$

7. $ST = 10$

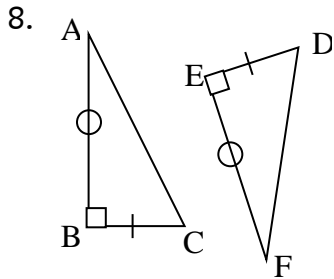
$3z - 8 = 2 + 4$
 $2z = 12$
 $z = 6$

$4x + 6 = 90$
 $4x = 84$
 $x = 21$
 $5y - 2 = 28$
 $5y = 30$
 $y = 6$

Section 4.5 and 4.6 Proving Triangles Congruent

5 WAYS of proving triangles CONGRUENT: SSS SAS ASA AAS HL

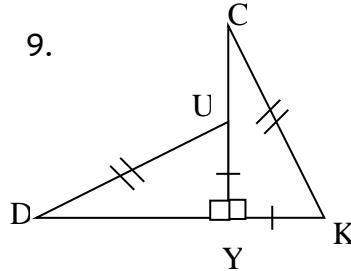
Write the postulate that would be used to prove the triangles congruent (if possible), and list the triangles.



Yes or No?

Why? SAS

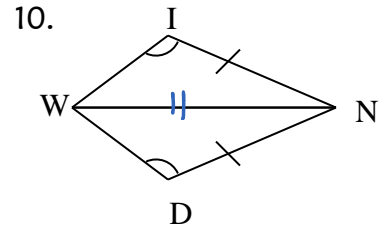
$$\triangle ABC \cong \triangle \underline{FED}$$



Yes or No?

Why? HL

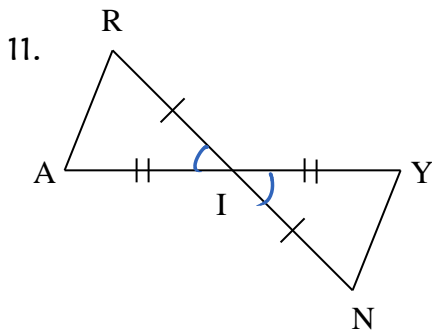
$$\triangle DUY \cong \triangle \underline{CKY}$$



Yes or No?

Why? _____

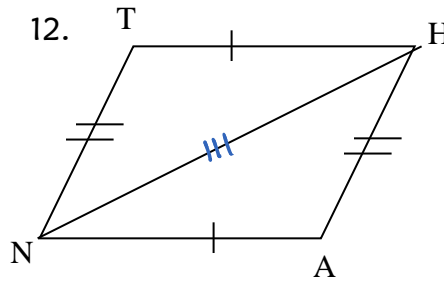
$$\triangle WIN \cong \triangle \underline{\quad}$$



Yes or No?

Why? SAS

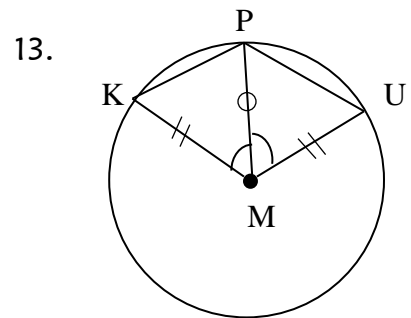
$$\triangle RAI \cong \triangle \underline{NYI}$$



Yes or No?

Why? SSS

$$\triangle NTH \cong \triangle \underline{HAN}$$



Yes or No?

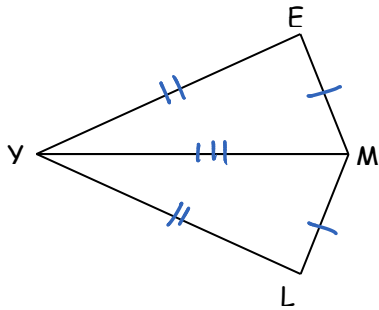
Why? SAS

$$\triangle KPM \cong \triangle \underline{UPM}$$

Proving Triangles Congruent

14. Given: $\overline{EM} \cong \overline{ML}$ and $\overline{EY} \cong \overline{YL}$

Prove: $\triangle EYM \cong \triangle LYM$



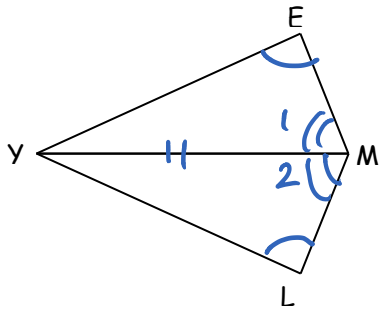
Statements

Reasons

- | | |
|--|-------------------|
| 1. $\overline{EM} \cong \overline{ML}$ | 1. Given |
| 2. $\overline{EY} \cong \overline{YL}$ | 2. Given |
| 3. $\overline{MY} \cong \overline{MY}$ | 3. reflexive prop |
| 4. $\triangle EYM \cong \triangle LYM$ | 4. SSS |

15. Given: \overline{YM} bisects $\angle EML$
 $\angle E \cong \angle L$

Prove: $\triangle EYM \cong \triangle LYM$



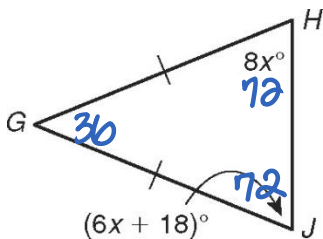
Statements

Reasons

- | | |
|--|--------------------|
| 1. \overline{YM} bisects $\angle EML$ | 1. G |
| (A) 2. $\angle E \cong \angle L$ | 2. G |
| (A) 3. $\angle 1 \cong \angle 2$ | 3. def of bisects |
| (S) 4. $\overline{YM} \cong \overline{YM}$ | 4. reflexive prop. |
| 5. $\triangle EYM \cong \triangle LYM$ | 5. AAS |

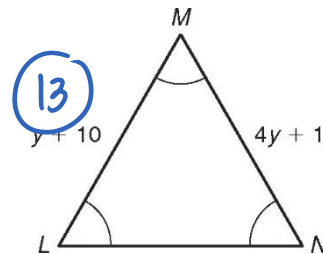
4.9 Isosceles Triangle

16. $m\angle G = \underline{36^\circ}$



$$\begin{aligned} 8x &= 6x + 18 \\ 2x &= 18 \\ x &= 9 \end{aligned}$$

17. $MN = \underline{13}$ $\angle L = \underline{120^\circ}$



$$\begin{aligned} y + 10 &= 4y + 1 \\ 9 &= 3y \\ y &= 3 \end{aligned}$$

