

3-1 and 3-2 Intro to Parallel and Perpendicular Lines

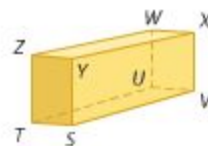
Postulate/ Theorem or Term	Explanation or Definition	Example
	Lines / planes that do not intersect Fact:	
Perpendicular lines /planes	Fact:	
	A line that intersects two or more coplanar lines	
Interior angles		
	Lines that lie outside of the intersected lines	
Alternate Interior Angles		
Alternate Exterior Angles		
Corresponding Angles		
Corresponding Angle Postulate		

Alternate Interior Angles Theorem		
Consecutive Interior Angles Theorem		
Alternate Exterior Angles Theorem		

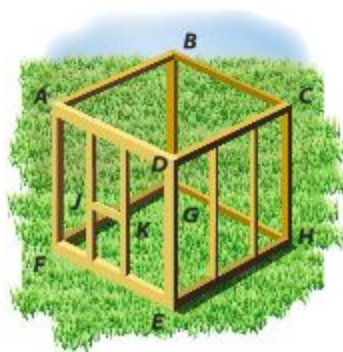
Patty Paper

Refer to the figure at the right to identify each of the following.

- a plane parallel to plane ZWX
- a segment skew to \overline{TS} that contains point W
- all segments parallel to \overline{SV}



- CONSTRUCTION** Use the diagram of the partially framed storage shed shown to identify each of the following.
 - Name three pairs of parallel planes.
 - Name three segments parallel to \overline{DE} .
 - Name two segments parallel to \overline{FE} .
 - Name two pairs of skew segments.



Classify the relationship between each pair of angles as *alternate interior*, *alternate exterior*, *corresponding*, or *consecutive interior* angles.



5. $\angle 1$ and $\angle 8$

6. $\angle 2$ and $\angle 4$

7. $\angle 3$ and $\angle 6$

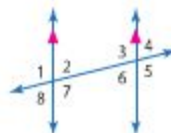
8. $\angle 6$ and $\angle 7$

In the figure, $m\angle 1 = 94$. Find the measure of each angle. Tell which postulate(s) or theorem(s) you used.

1. $\angle 3$

2. $\angle 5$

3. $\angle 4$

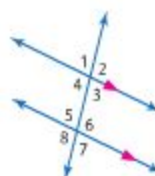


In the figure, $m\angle 4 = 101$. Find the measure of each angle. Tell which postulate(s) or theorem(s) you used.

4. $\angle 6$

5. $\angle 7$

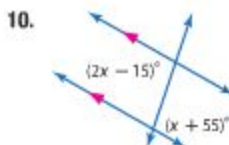
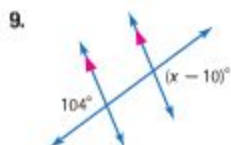
6. $\angle 5$



7. **ROADS** In the diagram, the guard rail is parallel to the surface of the roadway and the vertical supports are parallel to each other. Find the measures of angles 2, 3, and 4.



Find the value of the variable(s) in each figure. Explain your reasoning.



CCSS MODELING A solar dish collects energy by directing radiation from the Sun to a receiver located at the focal point of the dish. Assume that the radiation rays are parallel. Determine the relationship between each pair of angles, and explain your reasoning.



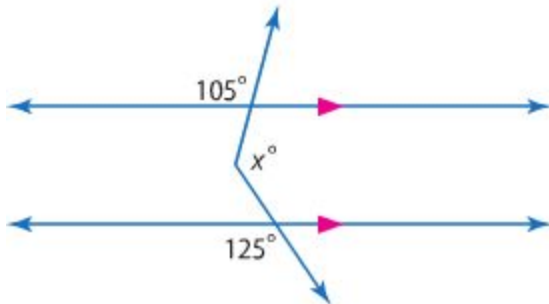
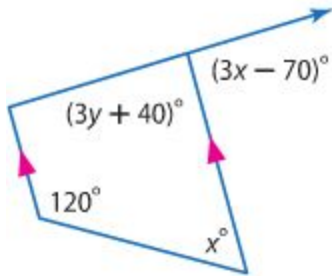
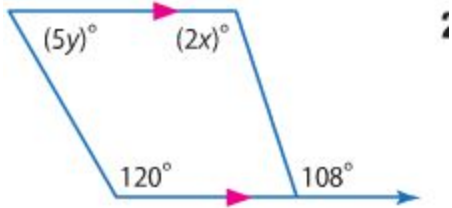
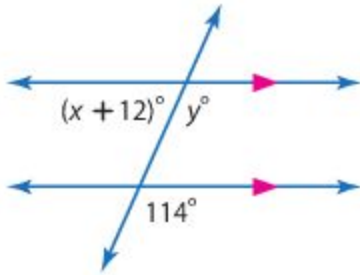
20. $\angle 1$ and $\angle 2$

21. $\angle 1$ and $\angle 3$

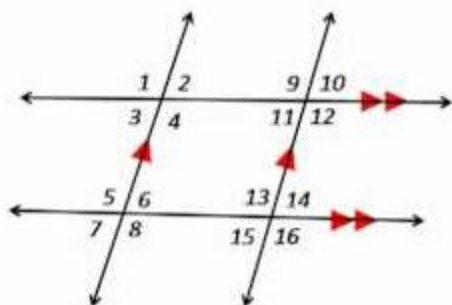
22. $\angle 4$ and $\angle 5$

23. $\angle 3$ and $\angle 4$

Find the measure of each numbered angle.



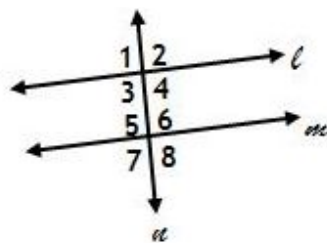
If $m\angle 4 = 110^\circ$, find all the other angle measures.



Write or complete the following proofs.

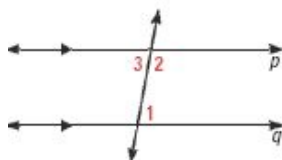
Given: ℓ is parallel to m

Prove: $\angle 2 \cong \angle 7$



GIVEN $\triangleright p \parallel q$

PROVE $\triangleright \angle 1$ and $\angle 2$ are supplementary.



Statements	Reasons
1. _____?	1. Given
2. $\angle 1 \cong \angle 3$	2. _____?
3. _____?	3. Definition of congruent angles
4. _____?	4. Definition of linear pair
5. $m\angle 3 + m\angle 2 = 180^\circ$	5. _____?
6. _____?	6. Substitution prop. of equality
7. $\angle 1$ and $\angle 2$ are supplementary.	7. _____?