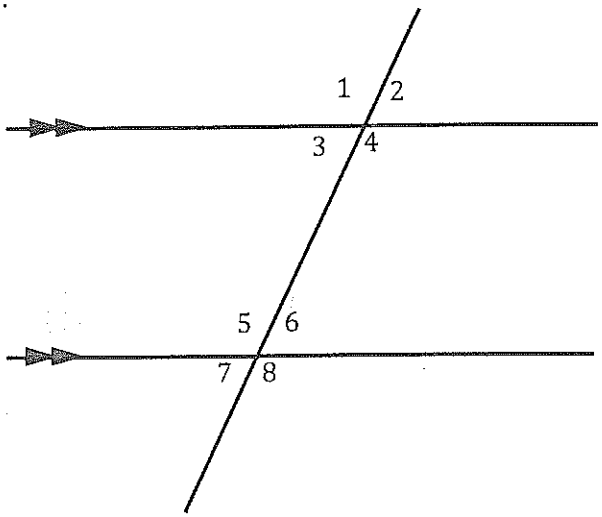
Ms. Beglin
Geometry
MHS

Name: _____
Date: _____
Period: 1 2 5 7 8 9

For our first exercise, bubble the correct answer choice for each item below. Refer to the previous pages if you need to.



1. ∠1 and ∠5 are...
   A. Corresponding
   B. Alternate Interior
   C. Alternate Exterior
   D. Consecutive

2. ∠8 and ∠4 are...
   A. Corresponding
   B. Alternate Interior
   C. Alternate Exterior
   D. Consecutive

3. ∠2 and ∠7 are...
   A. Corresponding
   B. Alternate Interior
   C. Alternate Exterior
   D. Consecutive

4. ∠3 and ∠6 are...
   A. Corresponding
   B. Alternate Interior
   C. Alternate Exterior
   D. Consecutive

5. ∠6 and ∠4 are...
   A. Corresponding
   B. Alternate Interior
   C. Alternate Exterior
   D. Consecutive

6. ∠2 and ∠6 are...
   A. Corresponding
   B. Alternate Interior
   C. Alternate Exterior
   D. Consecutive

7. ∠4 and ∠5 are...
   A. Corresponding
   B. Alternate Interior
   C. Alternate Exterior
   D. Consecutive

8. ∠1 and ∠8 are...
   A. Corresponding
   B. Alternate Interior
   C. Alternate Exterior
   D. Consecutive

9. ∠3 and ∠5 are...
   A. Corresponding
   B. Alternate Interior
   C. Alternate Exterior
   D. Consecutive

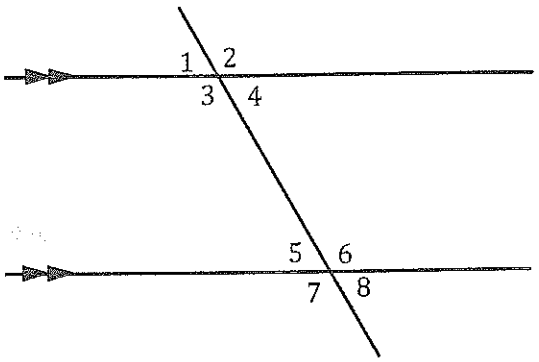
10. ∠4 and ∠8 are...
    A. Corresponding
    B. Alternate Interior
    C. Alternate Exterior
    D. Consecutive

Great Job, these are tough to remember which is which. If you are struggling, go back and try to memorize what each one looks like. (like remembering a picture) If you do that these will become very easy. Let's do some more!

Bubble the correct answer choice from each item above.

#1.	#2.	#3.	#4.	#5.	#6.	#7.	#8.	#9.	#10.
○A.	○A.	○A.	○A.	○A.	○A.	○A.	○A.	○A.	○A.
○B.	○B.	○B.	○B.	○B.	○B.	○B.	○B.	○B.	○B.
○C.	○C.	○C.	○C.	○C.	○C.	○C.	○C.	○C.	○C.
○D.	○D.	○D.	○D.	○D.	○D.	○D.	○D.	○D.	○D.

For each, state the angle relationship.



1. Angle ∠1 and ∠8 are...
   alternate exterior angles

2. Angle ∠3 and ∠5 are...

3. Angle ∠1 and ∠5 are...

4. Angle ∠4 and ∠8 are...

5. Angle ∠2 and ∠6 are...

6. Angle ∠4 and ∠5 are...

7. Angle ∠2 and ∠7 are...

8. Angle ∠3 and ∠6 are...

9. Angle ∠4 and ∠6 are...

10. Angle ∠3 and ∠7 are...

The next set might have some from other sections! You can do it!

11. Angle ∠7 and ∠6 are...
    vertical angles

12. Angle ∠5 and ∠7 are...

13. Angle ∠1 and ∠4 are...

14. Angle ∠6 and ∠3 are...

15. Angle ∠5 and ∠6 are...

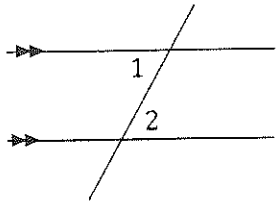
16. Angle ∠7 and ∠8 are...

17. Angle ∠7 and ∠3 are...

18. Angle ∠5 and ∠8 are...

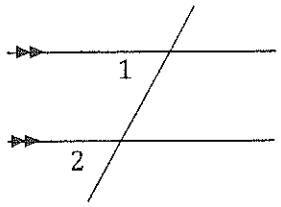
Let's take it up a notch... for each, write the angle relationship you see in the picture and a statement of whether the angles are equal or add to 180°.

1. This one is done for you so you know what to do.



Alternate interior, $m\angle 1 = m\angle 2$

2.



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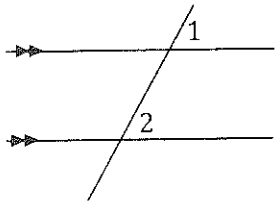

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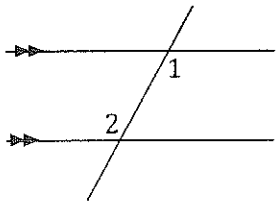

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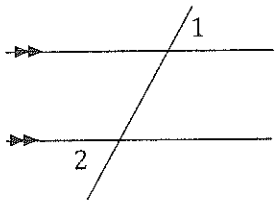

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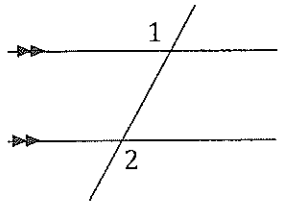

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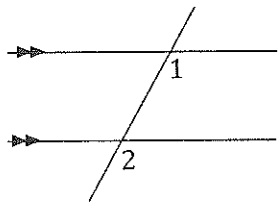

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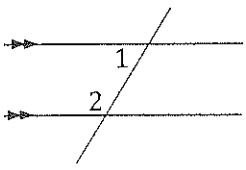

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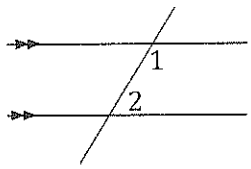
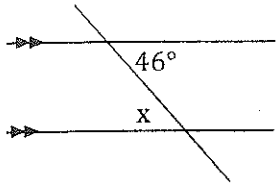


Great job!!

On these state the angle relationship, write a statement about whether they add to 180° or are equal, and solve for x if necessary.

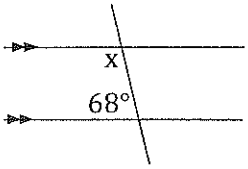
1. This one is done for you so you know what to do.



Alternate interior

46°=x

2.



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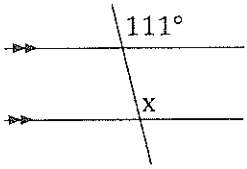

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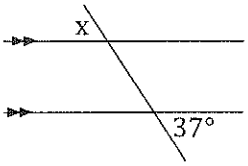

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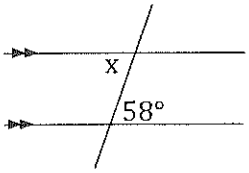

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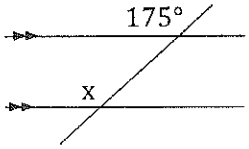
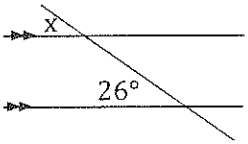


7.

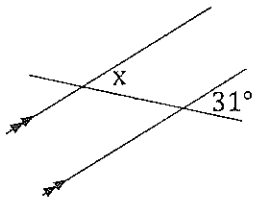


Bubble all the correct answers from above. Don't bubble incorrect answers.

○37° ○143° ○69° ●46° ○175° ○122° ○58° ○68° ○154° ○26° ○64° ○112° ○75° ○111°

Don't worry about these, they are just rotated.

8.



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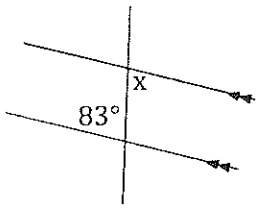

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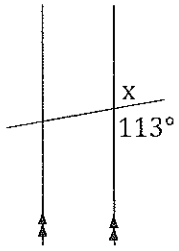

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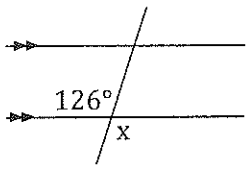

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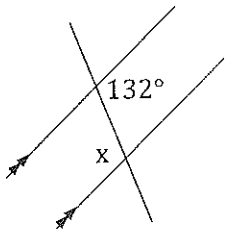

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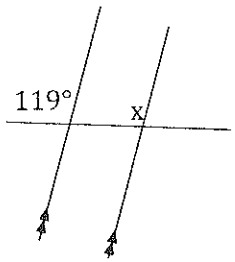

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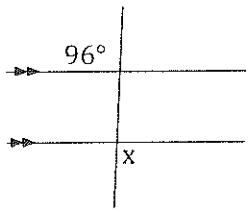

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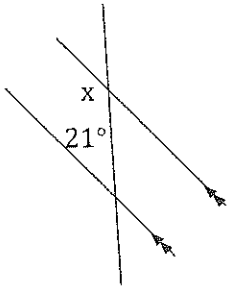
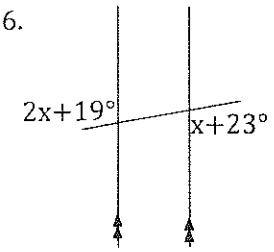


Bubble all the correct answers from above. Don't bubble incorrect answers.

◯31° ◯132° ◯54° ◯96° ◯159° ◯122° ◯83° ◯119° ◯154° ◯113° ◯67° ◯52° ◯58° ◯126°

On these state the angle relationship, write a statement about whether they add to 180° or are equal, and find the value of x.

16.



Alternate exterior

$2x+19°=x+23°$

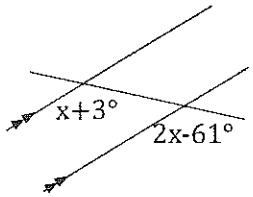
$-x \quad -x$

$x+19°=23°$

$-19°-19°$

$x=4°$

17.



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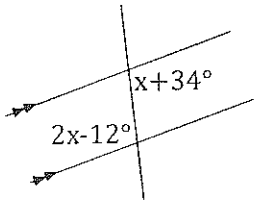

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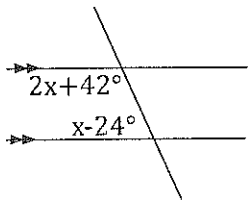

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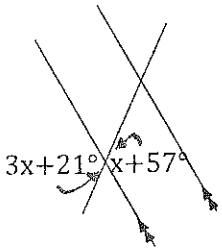

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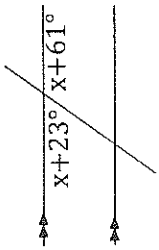

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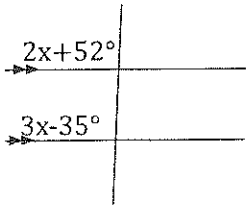
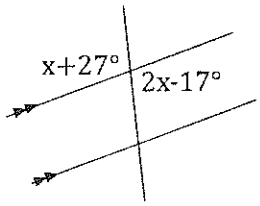


Bubble all the correct answers from above. Don't bubble incorrect answers.

○ 72° ● 4° ○ 12° ○ 46° ○ 18° ○ 64° ○ 154° ○ 42° ○ 30° ○ 48° ○ 97° ○ 28° ○ 87° ○ 83°

23.



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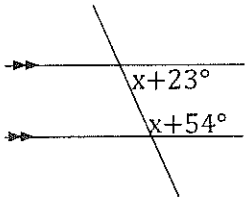

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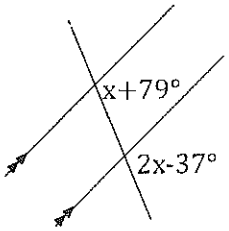

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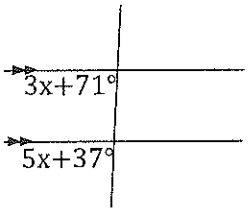

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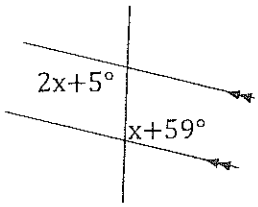

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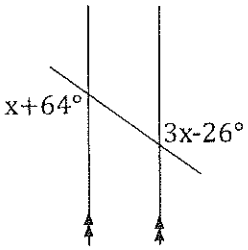

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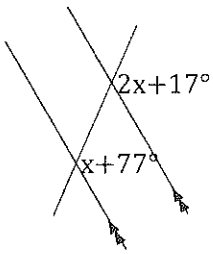

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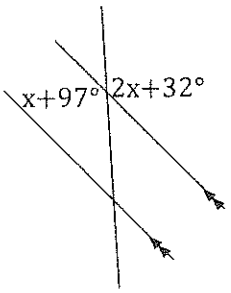


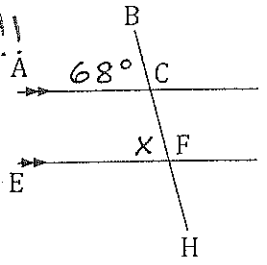
Bubble all the correct answers from above. Don't bubble incorrect answers.

◯31° ◯116° ◯20° ◯17° ◯54° ◯98° ◯51.5° ◯45° ◯60° ◯72.5° ◯65° ◯44° ◯30.5° ◯24°

Mark the diagram with the given information, state the angle relationship, and then solve for the indicated angle.

Label Every-thing!!

31. m∠ACB is 68° Find the m∠EFC.

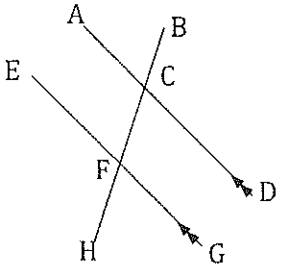


Corresponding

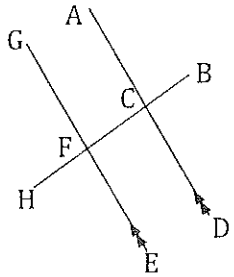
m∠ACB=m∠EFC

68°=m∠EFC

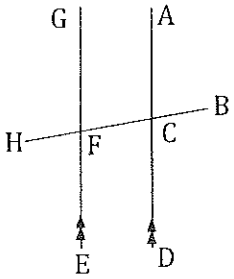
32. m∠DCH=85° Find m∠BFE.



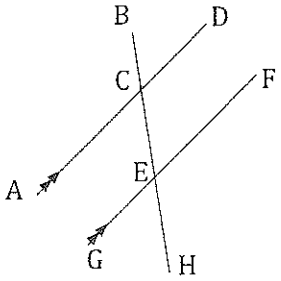
33. m∠EFB=91° Find m∠DCH.



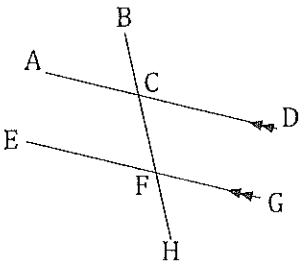
34. m∠HFG=103° Find m∠BCD.



35. m∠GEH=47° Find m∠BEF.



36. m∠DCH=63° Find m∠ACH.

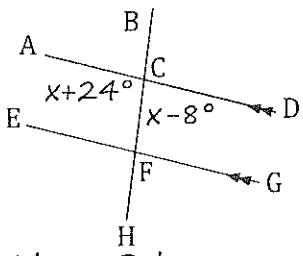


Bubble all the correct answers from above. Don't bubble incorrect answers.

○ 112° ○ 95° ○ 91° ○ 89° ○ 47° ○ 103° ○ 63° ● 68° ○ 77° ○ 85°

Label Everything!!

37. m∠ACH=X+24°, m∠DCH=X-8°. Find m∠ACH.



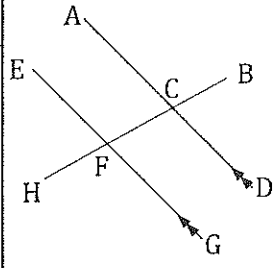
$\frac{2x}{2}=\frac{164°}{2}$

$x=82°$ ↓ Substitute

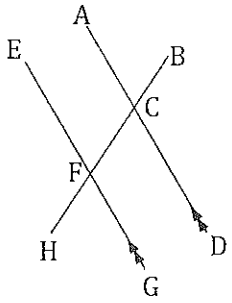
m∠ACH=x+24°
m∠ACH=82+24°
m∠ACH=106°

Linear Pair
m∠ACH+m∠DCH=180°
(x+24°)+(x-8°)=180°
x+24°+x-8°=180
2x+16°=180°
-16° -16°

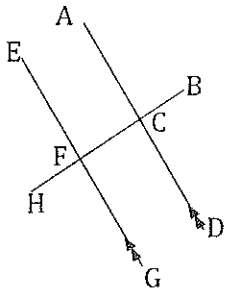
38. m∠ACB=2X-45°, m∠HFG=X+23°. Find m∠HFG.



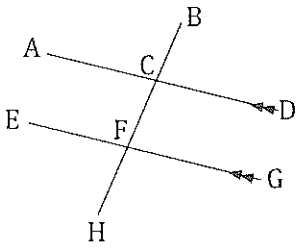
39. m∠EFH=2X-142°, m∠ACH=X+16°. Find m∠ACH.



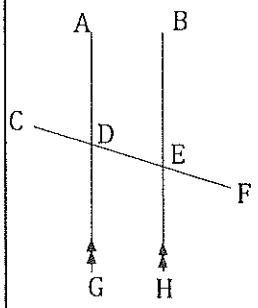
40. m∠GFB=x+32°, m∠DCH=X+24°. Find m∠DCH.



41. m∠BCD=X+26°, m∠BFG=2X-24°. Find m∠BFG.



42. m∠ADF=2X+4°, m∠HEC=4X-14°. Find m∠HEC.

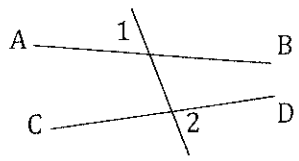


Bubble all the correct answers from above. Don't bubble incorrect answers.

○ 76° ○ 110° ○ 91° ○ 94° ● 106° ○ 97° ○ 22° ○ 165° ○ 86° ○ 92°

*Remember: Unless lines are parallel, the statement is false!

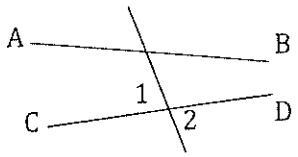
1. $m\angle 1 = m\angle 2$?



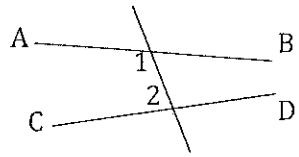
line AB & line CD are not parallel

$m\angle 1 = m\angle 2$ is False

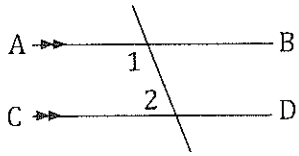
2. $m\angle 1 = m\angle 2$?



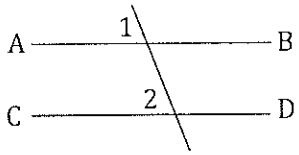
3. $m\angle 1 + m\angle 2 = 180°$?



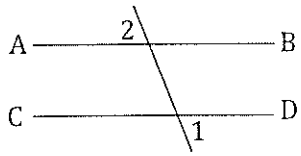
4. $m\angle 1 + m\angle 2 = 180°$?



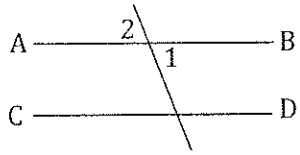
5. $m\angle 1 = m\angle 2$ is AB||CD?



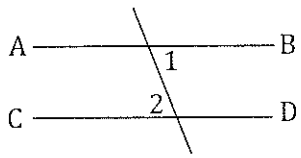
6. $m\angle 1 = m\angle 2$ is AB||CD?



7. $m\angle 1 = m\angle 2$ is AB||CD?



8. $m\angle 1 = m\angle 2$ is AB||CD?

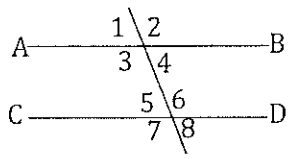


Bubble T for True and F for False.

#1.	#2.	#3.	#4.	#5.	#6.	#7.	#8.
○T	○T	○T	○T	○T	○T	○T	○T
●F	○F	○F	○F	○F	○F	○F	○F

Remember: Vertical Angles and Linear Pairs Never Prove That Lines ar Paralle

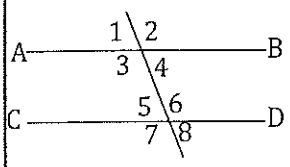
1. Which two angles must have the same measure to show that AB|| CD?



A. 3 and 2 are vertical ∠'s
B. 5 and 4 are alternate interior ∠'s
C. 7 and 6 are vertical ∠'s
D. 5 and 6 are linear pair

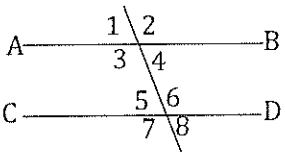
B is the correct answer

2. Which two angles must have the same measure to show that AB|| CD?



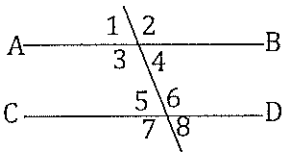
A. 1 and 5
B. 1 and 4
C. 3 and 4
D. 3 and 8

3. Which two angles must have the same measure to show that AB|| CD?



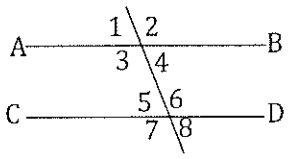
A. 2 and 5
B. 7 and 6
C. 6 and 8
D. 8 and 1

4. Which two angles must have the same measure to show that AB|| CD?



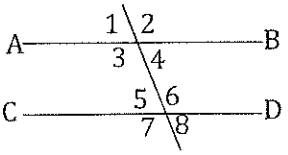
A. 6 and 2
B. 5 and 6
C. 7 and 8
D. 5 and 8

5. Which two angles must have the same measure to show that AB|| CD?



A. 1 and 3
B. 7 and 2
C. 1 and 4
D. 2 and 8

6. Which two angles must have the same measure to show that AB|| CD?



A. 5 and 8
B. 5 and 7
C. 4 and 8
D. 1 and 2

Bubble the correct answer choice from each item above.

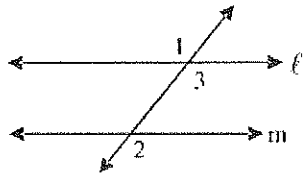
#1.	#2.	#3.	#4.	#5.	#6.
○ A.	○ A.	○ A.	○ A.	○ A.	○ A.
● B.	○ B.	○ B.	○ B.	○ B.	○ B.
○ C.	○ C.	○ C.	○ C.	○ C.	○ C.
○ D.	○ D.	○ D.	○ D.	○ D.	○ D.

R. Beglin Geometry Mission High School	Name:_____ Date:_____ Per.: 1 2 5 7 8 9

UNIT 3: PROOFS #2

Write a two-column proof to prove each statement.

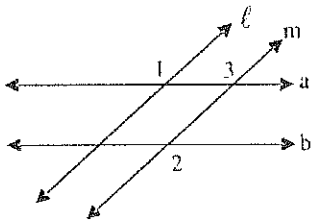
1) **Given:** $\angle 1 \cong \angle 2$
Prove: $\ell \parallel m$



Statement:	Justification:
$\ell \parallel m$	

---

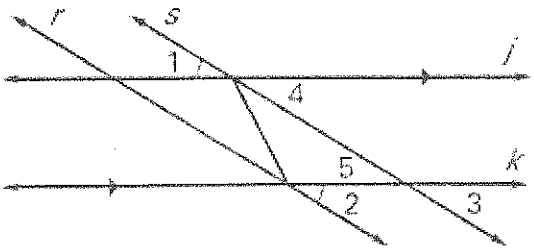
2) **Given:** $\ell \parallel m$
$\angle 1 \cong \angle 2$
Prove: a || b



Statement:	Justification:
$\ell \parallel m$	
a || b	

---

3) **Given:** j || k
$\angle 1 \cong \angle 2$
Prove: r || s



Statement:	Justification:
j || k	
$\angle 1 \cong \angle 2$	
$\angle 1 \cong \angle 5$	
$\angle 2 \cong \angle 5$	
r || s	