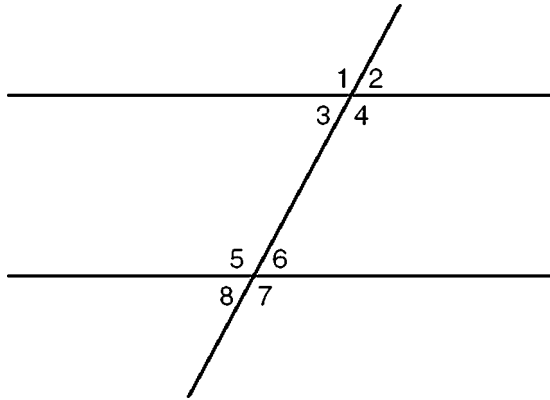


Unit 2: Parallel Lines Cut by a Transversal

Name: _____

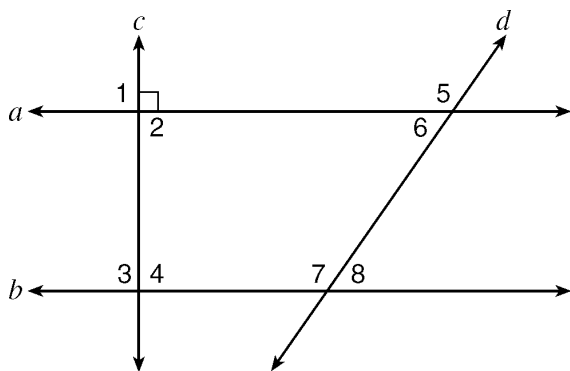
Date: _____

1. In the accompanying figure, what is one pair of alternate interior angles?



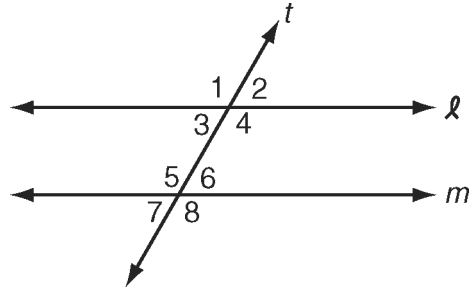
- A. $\angle 1$ and $\angle 2$ B. $\angle 4$ and $\angle 5$
 C. $\angle 4$ and $\angle 6$ D. $\angle 6$ and $\angle 8$

2. In the accompanying diagram, lines a and b are parallel, and lines c and d are transversals. Which angle is congruent to angle 8?



- A. 6 B. 5 C. 3 D. 4

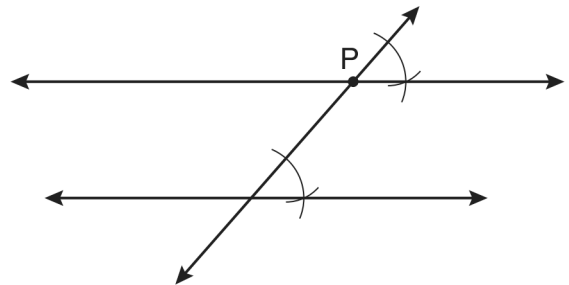
3. In the accompanying diagram, line ℓ is parallel to line m , and line t is a transversal.



Which must be a true statement?

- A. $m\angle 1 + m\angle 4 = 180$ B. $m\angle 1 + m\angle 8 = 180$
 C. $m\angle 3 + m\angle 6 = 180$ D. $m\angle 2 + m\angle 5 = 180$

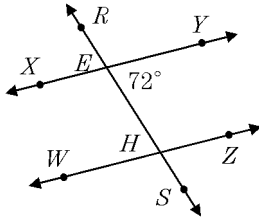
4. Which geometric principle is used to justify the construction below?



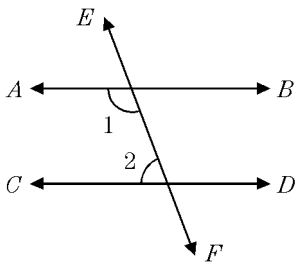
- A. A line perpendicular to one of two parallel lines is perpendicular to the other.
 B. Two lines are perpendicular if they intersect to form congruent adjacent angles.
 C. When two lines are intersected by a transversal and alternate interior angles are congruent, the lines are parallel.
 D. When two lines are intersected by a transversal and the corresponding angles are congruent, the lines are parallel.

Unit 2: Parallel Lines Cut by a Transversal

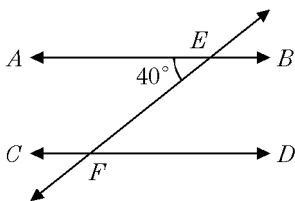
5. In the accompanying diagram, transversal \overleftrightarrow{RS} intersects parallel lines \overleftrightarrow{XY} and \overleftrightarrow{WZ} at E and H , respectively. If $m\angle HEY = 72$, what is $m\angle ZHS$?



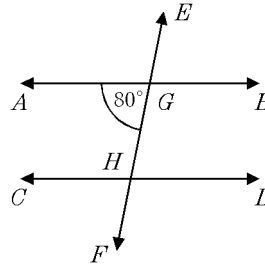
6. In the accompanying diagram, parallel lines \overleftrightarrow{AB} and \overleftrightarrow{CD} are cut by transversal \overleftrightarrow{EF} . If $m\angle 2 = 72$, what is $m\angle 1$?



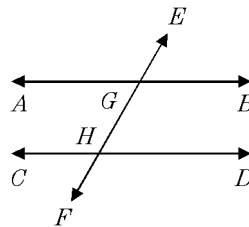
7. In the accompanying figure, parallel lines \overleftrightarrow{AB} and \overleftrightarrow{CD} are cut by transversal \overleftrightarrow{EF} . If $m\angle AEF = 40$, find $m\angle DFE$.



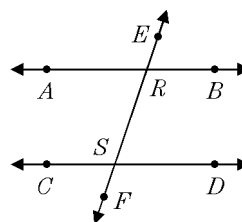
8. In the accompanying diagram, \overleftrightarrow{AB} and \overleftrightarrow{CD} are parallel and \overleftrightarrow{EF} intersects \overleftrightarrow{AB} at G and \overleftrightarrow{CD} at H . If $m\angle AGH = 80$, what is $m\angle CHG$?



9. In the accompanying diagram, \overleftrightarrow{AB} is parallel to \overleftrightarrow{CD} and transversal \overleftrightarrow{EF} intersects \overleftrightarrow{AB} and \overleftrightarrow{CD} at G and H , respectively. If $m\angle DHG : m\angle BGH = 1 : 2$, find $m\angle DHG$.

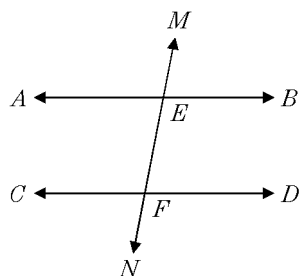


10. In the accompanying diagram, parallel lines \overleftrightarrow{AB} and \overleftrightarrow{CD} are cut by transversal \overleftrightarrow{EF} at R and S , respectively. If $m\angle ERB = 72$, find $m\angle RSC$.

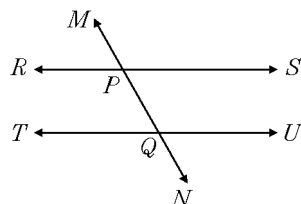


Unit 2: Parallel Lines Cut by a Transversal

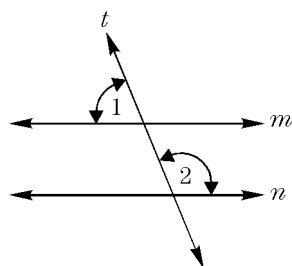
11. In the accompanying diagram, transversal \overleftrightarrow{MN} intersects parallel lines \overleftrightarrow{AB} and \overleftrightarrow{CD} at E and F , respectively, if $m\angle AEF$ is 80, find the number of degrees in $\angle EFD$.



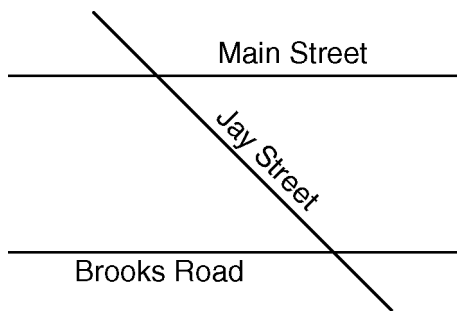
12. In the accompanying diagram, transversal \overleftrightarrow{MN} intersects parallel lines \overleftrightarrow{RS} and \overleftrightarrow{TU} at points P and Q , respectively. If $m\angle RPM = 50$, find $m\angle PQU$.



13. Parallel lines m and n are cut by transversal t . If $m\angle 1 = 75$, find $m\angle 2$.



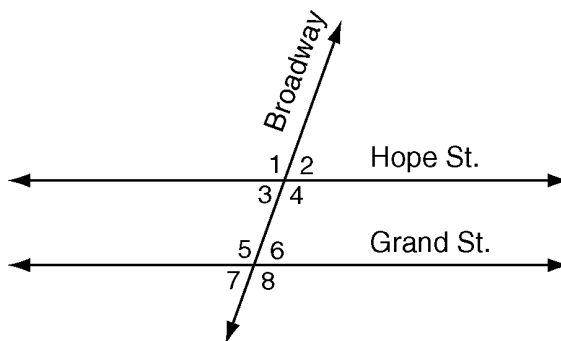
14. The accompanying diagram shows two parallel streets, Main Street and Brooks Road, intersected by Jay Street. The obtuse angle that Jay Street forms with Brooks Road is three times the measure of the acute angle that Jay Street forms with Main Street.



What is the measure of the acute angle formed by Jay Street and Main Street?

- A. 45° B. 60° C. 90° D. 135°

15. The accompanying diagram shows two parallel roads, Hope Street and Grand Street, crossed by a transversal road, Broadway.

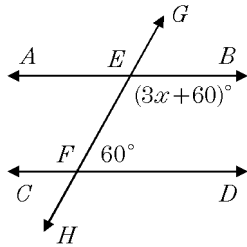


If $m\angle 1 = 110$, what is the measure of $\angle 7$?

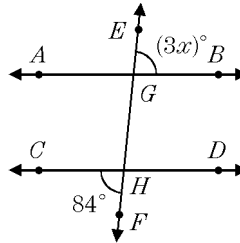
- A. 40° B. 70° C. 110° D. 180°

Unit 2: Parallel Lines Cut by a Transversal

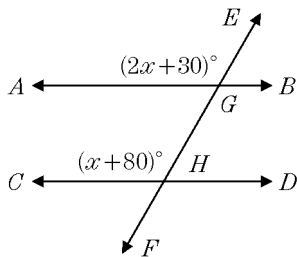
16. In the accompanying diagram, parallel lines \overleftrightarrow{AB} and \overleftrightarrow{CD} are cut by transversal \overleftrightarrow{GH} at E and F , respectively. If $m\angle BEF = (3x + 60)$, find the value of x .



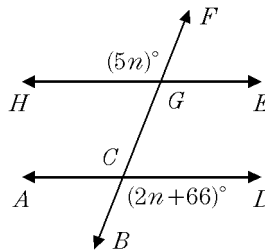
18. In the accompanying diagram, parallel lines \overleftrightarrow{AB} and \overleftrightarrow{CD} are intersected by transversal \overleftrightarrow{EF} at points G and H , respectively. If the measure of angle EGB is $3x$ and the measure of angle CHF is 84 , find the value of x .



17. In the accompanying diagram, \overleftrightarrow{AB} is parallel to \overleftrightarrow{CD} , and \overleftrightarrow{AB} and \overleftrightarrow{CD} are cut by transversal \overleftrightarrow{EF} at points G and H , respectively. If $m\angle EGA = (2x + 30)$ and $m\angle EHC = (x + 80)$, find x .

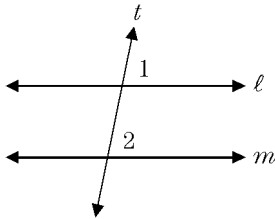


19. In the accompanying diagram, parallel lines \overleftrightarrow{HE} and \overleftrightarrow{AD} are cut by transversal \overleftrightarrow{BF} at points G and C , respectively. If $m\angle HGF = 5n$ and $m\angle BCD = 2n + 66$, find n .

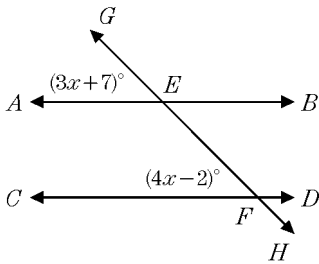


Unit 2: Parallel Lines Cut by a Transversal

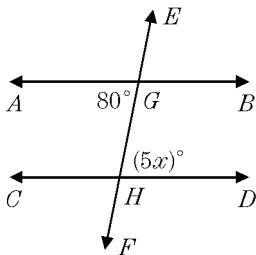
20. In the accompanying diagram, transversal t intersects parallel lines ℓ and m . If $m\angle 1 = 2x + 40$ and $m\angle 2 = 3x + 20$, find the value of x .



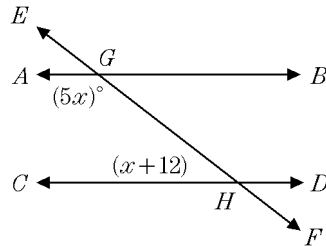
21. In the accompanying diagram, parallel lines \overleftrightarrow{AB} and \overleftrightarrow{CD} are intersected by transversal \overleftrightarrow{GH} at points E and F , respectively. If $m\angle AEG$ is $(3x + 7)$ and $m\angle CFE$ is $(4x - 2)$, find x .



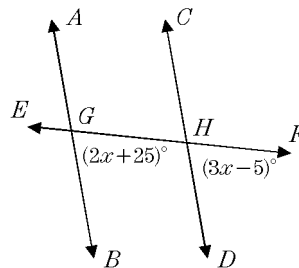
22. In the accompanying diagram, $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$ and \overleftrightarrow{EF} intersects \overleftrightarrow{AB} at G and \overleftrightarrow{CD} at H . If $m\angle AGH = 80$ and $m\angle DHG = 5x$, find the value of x .



23. In the accompanying diagram, parallel lines \overleftrightarrow{AB} and \overleftrightarrow{CD} are intersected by transversal \overleftrightarrow{EF} at G and H , respectively. If $m\angle AGH = 5x$ and $m\angle CHG = x + 12$, find the value of x .

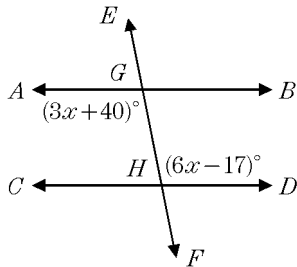


24. In the accompanying diagram, parallel lines \overleftrightarrow{AB} and \overleftrightarrow{CD} are intersected by transversal \overleftrightarrow{EF} at points G and H , respectively. If $m\angle FGB = 2x + 25$ and $m\angle FHD = 3x - 5$, find x .

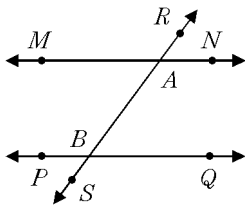


Unit 2: Parallel Lines Cut by a Transversal

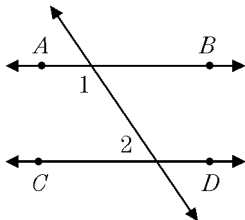
25. In the accompanying diagram, transversal \overleftrightarrow{EF} intersects parallel lines \overleftrightarrow{AB} and \overleftrightarrow{CD} at G and H , respectively. If $m\angle AGH = 3x + 40$, and $m\angle GHD = 6x - 17$, what is the value of x ?



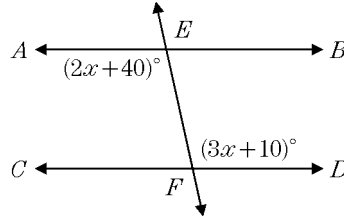
26. In the accompanying diagram, transversal \overleftrightarrow{RS} intersects parallel lines \overleftrightarrow{MN} and \overleftrightarrow{PQ} at A and B , respectively. If $m\angle RAN = 3x + 24$ and $m\angle RBQ = 7x - 16$, find the value of x .



27. In the accompanying diagram, $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$. If $m\angle 1 = 4x - 10$ and $m\angle 2 = 2x - 20$, find x .

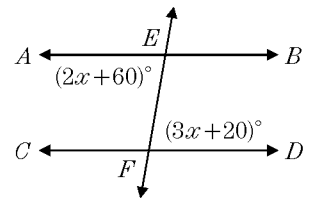


28. In the accompanying diagram, $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$ and \overleftrightarrow{EF} is transversal. If $m\angle AEF = 2x + 40$, and $m\angle EFD = 3x + 10$, find x .

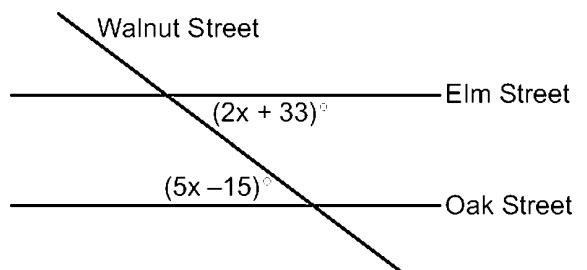


29. In the accompanying diagram, \overleftrightarrow{AB} is parallel to \overleftrightarrow{CD} , and \overleftrightarrow{EF} is a transversal. If $m\angle BEF = 2x + 60$ and $m\angle DFE = 3x + 20$, what is $m\angle BEF$?

- A. 100 B. 20
C. 140 D. 40

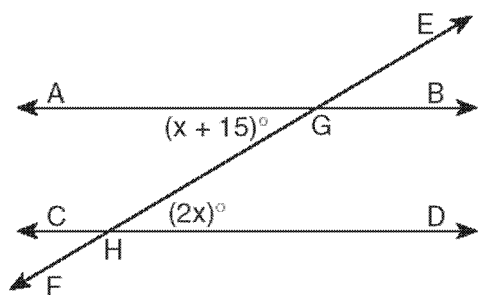


30. Two parallel roads, Elm Street and Oak Street, are crossed by a third, Walnut Street, as shown in the accompanying diagram. Find the number of degrees in the acute angle formed by the intersection of Walnut Street and Elm Street.



Unit 2: Parallel Lines Cut by a Transversal

31. In the accompanying diagram, parallel lines \overleftrightarrow{AB} and \overleftrightarrow{CD} are intersected by transversal at points G and H , respectively, $m\angle AGH = x + 15$, and $m\angle GHD = 2x$. Which equation can be used to find the value of x ?



- A. $2x = x + 15$ B. $2x + x + 15 = 180$
C. $2x + x + 15 = 90$ D. $2x(x + 15) = 0$

Unit 2: Parallel Lines Cut by a Transversal 01/22/2013

- | | | | |
|---------|-----|---------|----|
| 1. | | 21. | |
| Answer: | B | Answer: | 9 |
| 2. | | 22. | |
| Answer: | A | Answer: | 16 |
| 3. | | 23. | |
| Answer: | D | Answer: | 28 |
| 4. | | 24. | |
| Answer: | D | Answer: | 30 |
| 5. | | 25. | |
| Answer: | 72 | Answer: | 19 |
| 6. | | 26. | |
| Answer: | 108 | Answer: | 10 |
| 7. | | 27. | |
| Answer: | 40 | Answer: | 35 |
| 8. | | 28. | |
| Answer: | 100 | Answer: | 30 |
| 9. | | 29. | |
| Answer: | 60 | Answer: | A |
| 10. | | 30. | |
| Answer: | 108 | Answer: | 65 |
| 11. | | 31. | |
| Answer: | 80 | Answer: | A |
| 12. | | | |
| Answer: | 130 | | |
| 13. | | | |
| Answer: | 105 | | |
| 14. | | | |
| Answer: | A | | |
| 15. | | | |
| Answer: | B | | |
| 16. | | | |
| Answer: | 20 | | |
| 17. | | | |
| Answer: | 50 | | |
| 18. | | | |
| Answer: | 28 | | |
| 19. | | | |
| Answer: | 22 | | |
| 20. | | | |
| Answer: | 20 | | |