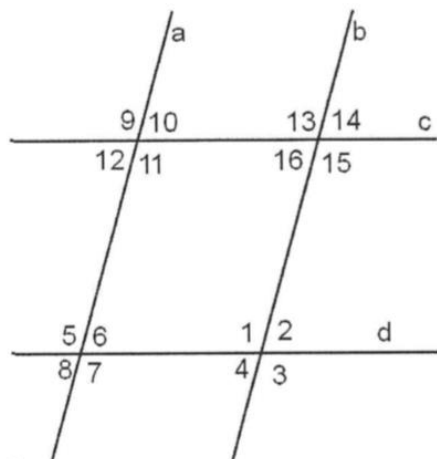


Geometry Review Sec 3-1 to 3-3

Use the figure below where $a \parallel b$ and $c \parallel d$



State the name given to each pair of angles, if any, and their relationship.

1. 10 and 15 2. 3 and 7 3. 12 and 15 4. 2 and 4

5. 11 and 5 6. 4 and 10 7. 1 and 6 8. 13 and 3

Use the same figure above to write a proof.

9. Given: $a \parallel b$ and $c \parallel d$

Prove: $\angle 14 \cong \angle 8$

10. Given: $a \parallel b$ and $c \parallel d$

Prove: $\angle 2$ & $\angle 9$ are supplementary

Use the same figure above to write a proof.

11. Given: $a \parallel b$ and $\angle 12 \cong \angle 4$

Prove: $c \parallel d$

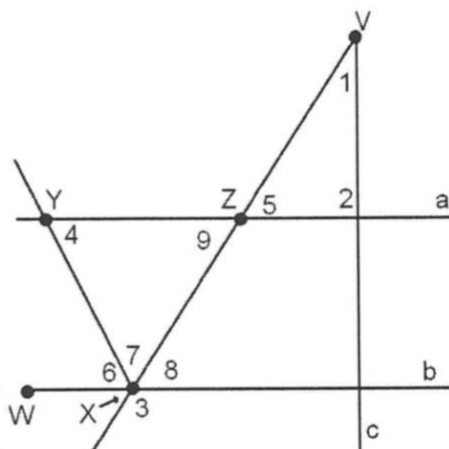
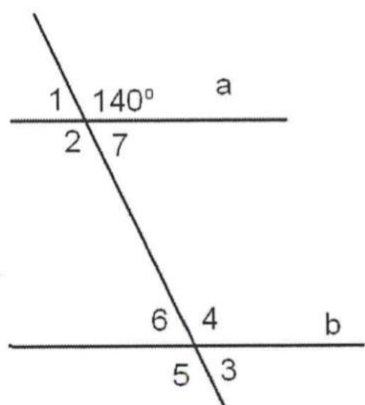
12. Given: $c \parallel d$ and $\angle 2$ & $\angle 9$ are suppl

Prove: $a \parallel b$

Find the measure of the numbered angles in each diagram.

13. Given: $a \parallel b$

14. Given: $a \parallel b$ $c \perp b$ $\overline{XY}$ bisects $\angle WXZ$
 $m\angle YZV = 146^\circ$

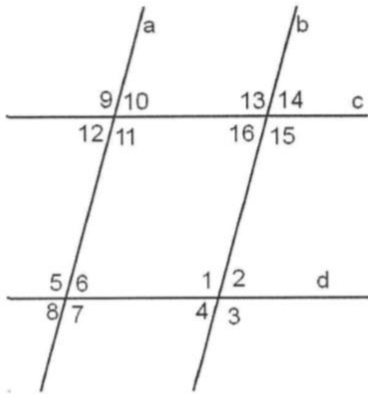


15. State the relationship between lines a and g

a. $a \perp b$ $b \perp c$ $c \parallel d$ $d \perp e$ $e \parallel f$ $f \parallel g$

b. $a \parallel b$ $b \perp c$ $c \parallel d$ $d \parallel e$ $e \perp g$

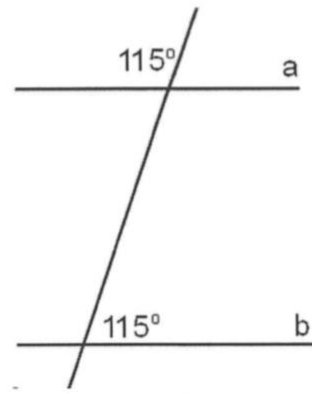
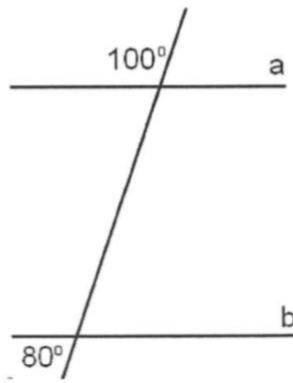
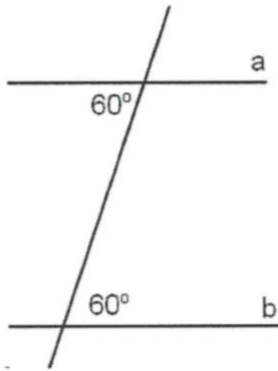
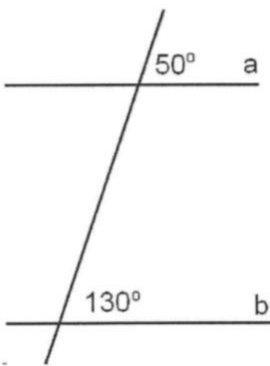
16. Use the figure below and the given information to determine if there are any parallel lines. If yes, state which pair of lines are parallel and give a reason.



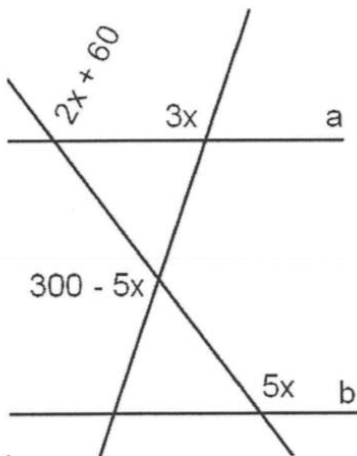
- a. $\angle 6 \cong \angle 2$ b. $\angle 9 \cong \angle 7$ c. $\angle 13 \cong \angle 15$ d. $\angle 14 \cong \angle 4$
 e. $\angle 10 \cong \angle 4$ f. $\angle 11$ & $\angle 16$ are suppl. g. $\angle 3$ & $\angle 12$ are suppl. h. $\angle 9$ & $\angle 8$ are suppl.

Are lines a and b parallel? If yes, give a reason.

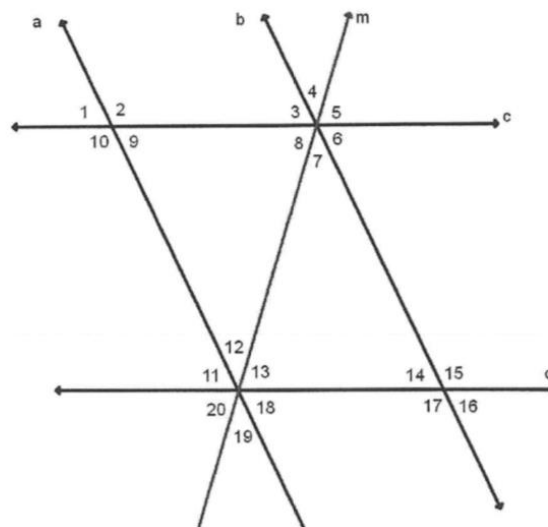
17. 18. 19. 20.



21. Find the value of x so that lines a and b are parallel.



22. Name the parallel lines and the transversal that form each pair of angles then name the angles



- a) 19 and 7 b) 11 and 15
 c) 3 and 16 d) 7 and 12 e) 9 and 11

Geometry Review

ANSWERS

Sec 3-1 to 3-3

1. No name, Supplementary
2. Corresponding $\angle$'s, $\cong$
3. Same-Side Exterior $\angle$'s, supplementary
4. Vertical $\angle$'s, $\cong$
5. Alternate Interior Angles $\angle$'s, $\cong$
6. No Name, $\cong$
7. Same-Side Interior $\angle$'s, supplementary
8. Alternate Exterior $\angle$'s, $\cong$

For 9 to 12 there are many different proofs possible. Examples are given.

Statement	Reason	Statement	Reason
1. $a \parallel b$ and $c \parallel d$	1. Given	1. $a \parallel b$ and $c \parallel d$	1. Given
9. 2. $\angle 14 \cong \angle 2$	2. Corresp $\angle$'s are $\cong$	10. 2. $\angle 2$ & $\angle 15$ are suppl	2. Same-Side Int $\angle$'s, suppl
3. $\angle 2 \cong \angle 8$	3. Alt Ext $\angle$'s are $\cong$	3. $\angle 15 \cong \angle 9$	3. Alt Ext $\angle$'s are $\cong$
4. $\angle 14 \cong \angle 8$	4. Substitution	4. $\angle 2$ & $\angle 9$ are suppl	4. Substitution

Statement	Reason
1. $a \parallel b$ and $\angle 12 \cong \angle 4$	1. Given
11. 2. $\angle 12 \cong \angle 16$	2. Corresp $\angle$'s are $\cong$
3. $\angle 16 \cong \angle 4$	3. Substitution
4. $c \parallel d$	4. Because Corresp $\angle$'s are $\cong$

Statement	Reason
1. $c \parallel d$ and $\angle 2$ & $\angle 9$ are suppl	1. Given
12. 2. $\angle 2 \cong \angle 14$	2. Corresp $\angle$'s are $\cong$
3. $\angle 14$ & $\angle 9$ are suppl	3. Substitution
4. $a \parallel b$	4. Because Same-Side Exterior $\angle$'s are supplementary

13. $m\angle$'s 1,3,6,7 = 40° $m\angle$'s 2,4,5 = 140°

14. $m\angle 1 = 56^\circ$ $m\angle 2 = 90^\circ$ $m\angle 3 = 146^\circ$ $m\angle 4 = 73^\circ$ $m\angle 5 = 34^\circ$
 $m\angle 6 = 73^\circ$ $m\angle 7 = 73^\circ$ $m\angle 8 = 34^\circ$ $m\angle 9 = 34^\circ$

15. a. $a \perp g$ b. $a \parallel g$

16. a. $a \parallel b$ because Corresp $\angle$'s are $\cong$ b. $c \parallel d$ because Alt Ext $\angle$'s are $\cong$
 c. Not enough information. d. $c \parallel d$ because Alt Ext $\angle$'s are $\cong$ e. Not enough information
 f. $a \parallel b$ because Same-Side Int $\angle$'s are suppl g. Not enough information
 h. $c \parallel d$ because Same-Side Ext $\angle$'s are suppl

17. Not Parallel 18. $a \parallel b$ because Alt Int $\angle$'s are $\cong$
 19. $a \parallel b$ because Same-Side Ext $\angle$'s are suppl 20. Not Parallel

21. Using corresponding angles $2x + 60 = 5x$ $x = 20$

22. a) Parallel Lines are a & b with Transversal m Corresponding
 b) Parallel Lines are a & b with Transversal d Same-Side Ext
 c) Parallel Lines are c & d with Transversal b Alt-Ext
 d) Parallel Lines are a & b with Transversal m Alt-Int
 e) Parallel Lines are c & d with Transversal a Alt-Int