Geometry- Mrs. Tilus Name: _____
Unit 2/3 Review

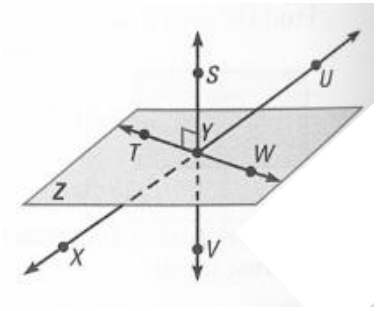
Complete the statement and name the property

1. If $m\angle JKL = m\angle GHI$ and $m\angle GHI = m\angle ABC$, then _____ = _____

2. $m\angle XYZ =$_____

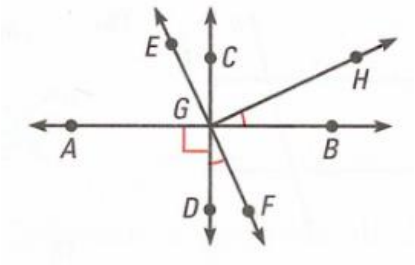
3. If $m\angle MNO = m\angle PQR$, then $m\angle PQR =$_____

Use the diagram to determine if the statement is *true* or *false.*



4. $\overleftrightarrow{SV} \perp$ plane Z.
5. $\overleftrightarrow{XU}$ intersect plane Z at point Y.
6. $\overleftrightarrow{TW}$ lies in plane Z.
7. $\angle SYT$ and $\angle WYS$ are vertical angles.
8. $\angle SYT$ and $\angle TYV$ are complementary angles
9. $\angle TYU$ and $\angle UYW$ are a linear pair.
10. $\angle UYV$ is acute

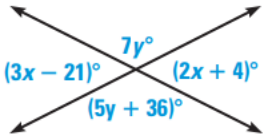
Complete the statement using the diagram.



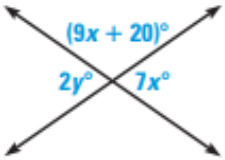
11. If $m\angle CGF = 158°$, Then $m\angle EGD =$_____
12. If $m\angle EGA = 67°$, Then $m\angle FGD =$_____
13. If $m\angle FGC = 149°$, Then $m\angle EGA =$_____
14. $m\angle DGB =$_____
15. $m\angle FGH =$_____

Find *x* and *y*.

16.



17.



Solve the equation. Write a reason for each step (include substitution).

18. $9x + 31 = -23$

Statement	Reason
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____

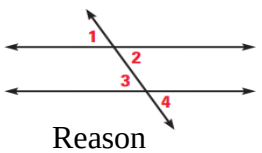
19. $\frac{n-5}{-4} = -2$

Statement	Reason
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____

20. $-7(-x + 2) = 42$

Statement	Reason
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____
7. _____	7. _____

21. **Given:** $\angle 1 \cong \angle 3$
Prove: $\angle 2 \cong \angle 4$

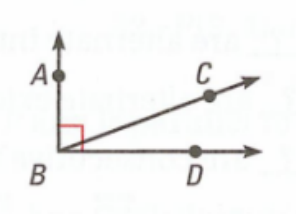


Statement	Reason
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____

22. **Given:** Point C is in the interior of $\angle ABD$

$\angle ABD$ is a right angle.

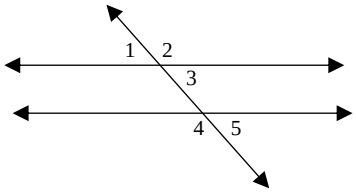
Prove: $\angle ABC$ and $\angle CBD$ are complementary



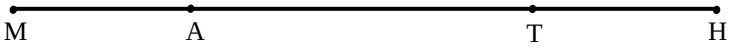
Statement	Reason
1. $\angle ABD$ is a right angle	1. _____
2. $m\angle ABD = 90°$	2. _____
3. _____	3. Given
4. _____	4. Angle Addition Postulate
5. _____$= m\angle ABC + m\angle CBD$	5. _____
6. _____	6. _____

23. **Given:** $\angle 1 \cong \angle 5$

Prove: $\angle 1$ is supplementary to $\angle 4$



Statement	Reason
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____



24. **Given:** $MA = TH$

Prove: $MT = AH$

Statement	Reason
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____

25. **Given:** $\overrightarrow{BD}$ bisects $\angle ABC$ (Draw it out!)

Prove: $m\angle ABC = 2 \cdot m\angle ABD$

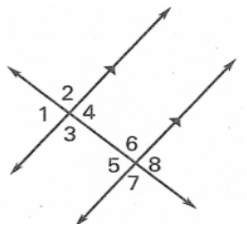
Statement	Reason
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____

26. **Given:** $\angle ABC$ is a right angle (Draw it out!)
$\overrightarrow{BD}$ is an angle bisector

Prove: $m\angle DBC = 45°$

Statement	Reason
1. _____	1. _____
1. _____	
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____

Complete the statement using the diagram.



27. $\angle 1$ and _____ are corresponding angles

28. $\angle 4$ and _____ are consecutive interior angles

29. $\angle 3$ and _____ are alternate interior angles

30. $\angle 5$ and _____ are consecutive interior angles

31. $\angle 2$ and _____ are vertical angles

32. $\angle 6$ and _____ are corresponding angles

33. $\angle 4$ and _____ are alternate interior angles

34. $\angle 5$ and _____ are vertical angles

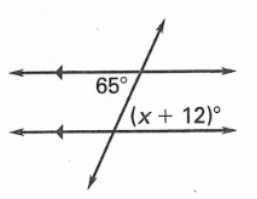
35. $\angle 1$ and _____ are vertical angles

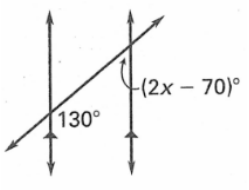
36. $\angle 7$ and _____ are corresponding angles

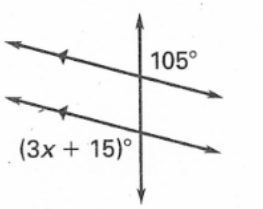
37. $\angle 1$ and _____ are alternate exterior angles

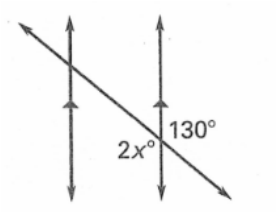
38. $\angle 4$ and _____ are corresponding angles

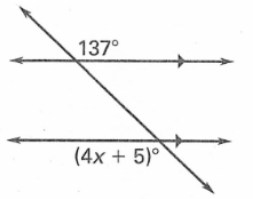
Find the value of x.

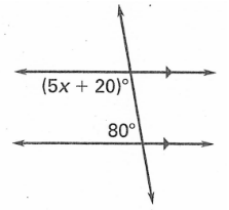
39. 

40. 

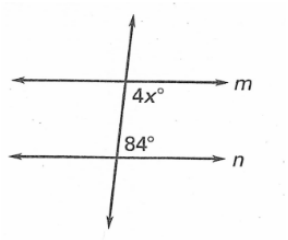
41. 

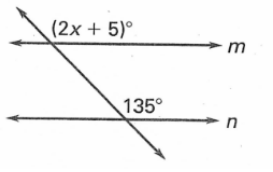
42. 

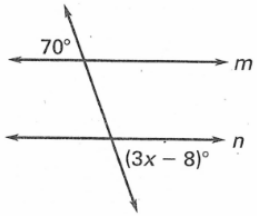
43. 

44. 

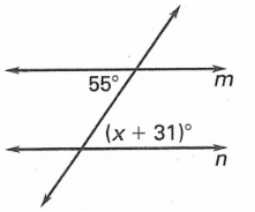
Find the value of x that makes $m \parallel n$.

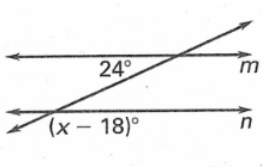
45. 

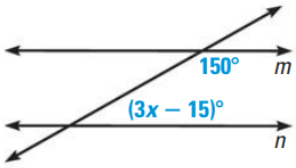
46. 

47. 

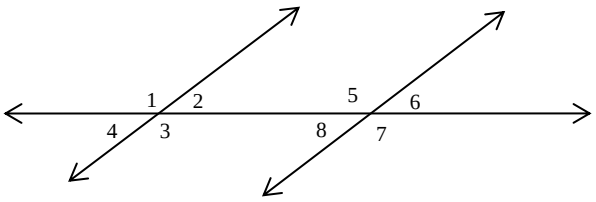
Find the value of x that makes $m \parallel n$.

48. 

49. 

50. 

Use the diagram and information below to determine if there is enough information to prove $a \parallel b$. Write parallel or not parallel. If the lines are parallel, write which theorem or postulate justifies your answer.



51. Given: $\angle 4 \cong \angle 6$

52. Given: $\angle 4 \cong \angle 2$

53. Given: $m\angle 4 + m\angle 1 = 180°$

54. Given: $\angle 4 \cong \angle 8$

55. Given: $\angle 5 \cong \angle 7$

56. Given: $m\angle 2 + m\angle 5 = 180°$

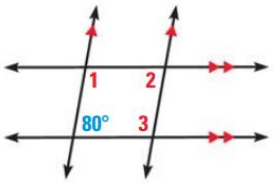
57. $m\angle 7 + m\angle 8 = 180°$

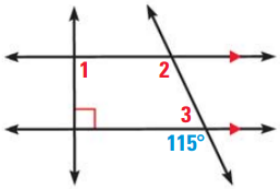
58. Given: $\angle 3 \cong \angle 5$

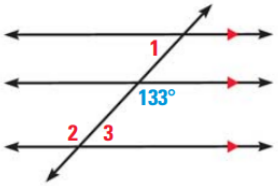
59. Given: $\angle 2 \cong \angle 5$

60. Given: $m\angle 3 + m\angle 6 = 180°$

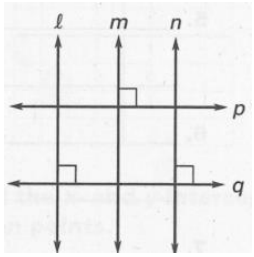
Find $m\angle 1$, $m\angle 2$ and $m\angle 3$.

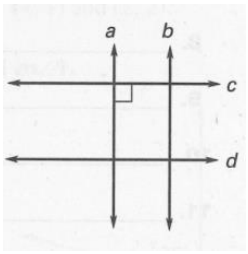
61. 

62. 

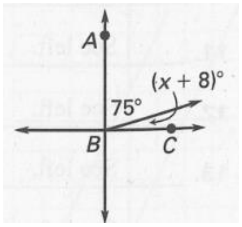
63. 

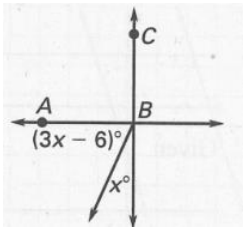
Determine which lines, if any must be parallel. **Explain**.

64. 

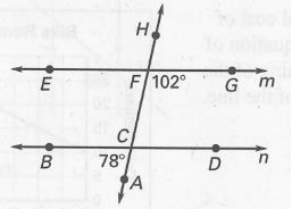
65. 

In the diagram, $\overleftrightarrow{AB} \perp \overleftrightarrow{BC}$. Find the value of *x*.

66. 

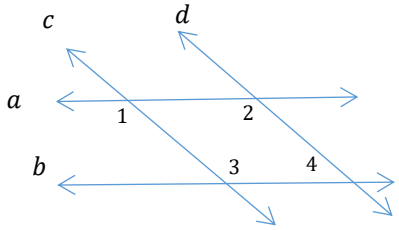
67. 

68. **Given:** $m\angle BCA = 78°$
$m\angle CFG = 102°$
Prove: $m \parallel n$



Statement	Reason
1. _____	1. _____
1. _____	
2. $\angle FCD \cong \angle BCA$	2. _____
3. _____	3. Definition of Congruent Angles
4. $m\angle FCD = 78°$	4. _____
5. $78° + 102° = 180°$	5. _____
6. $m\angle FCD + m\angle CFG = 180°$	6. _____
7. _____	7. Definition of Supplementary Angles
8. _____	8. _____

69. **Given:** $\angle 2 \cong \angle 3, a \parallel b$
Prove: $c \parallel d$



Statement	Reason
1. _____	1. _____
1. _____	
2. $m\angle 2 = m\angle 3$	2. _____
3. _____	3. Consecutive Interior Angles Theorem
4. $m\angle 2 + m\angle 4 = 180°$	4. _____
5. _____	5. Substitution Property
6. $\angle 3$ and $\angle 4$ are supplementary	6. _____
7. _____	7. _____