**Find the measurement indicated in each parallelogram.**

|  |  |  |
| --- | --- | --- |
| 1.  | 2.  | 3.  |
| 4. | 5.  | 6.  |

**Solve for the variable. Each figure is a Parallelogram.**

|  |  |  |
| --- | --- | --- |
| 7.  | 8.  | 9.  |
| 10. | 11.  | 12.  |

Find the measures of the numbered angles for each parallelogram**.**

13. 14. 15.





16. AE *= x +* 5*,* EC *= y,* DE *=* 2x*+*3*,* EB*= y +* 2

17. AE = 3*x*, EC = 2y – 2, DE = 5x, EB = 2y + 2

**Find the measures of the numbered angles in each rhombus.**

18. 19. 20. 21.

22. Find the given lengths in the rhombus below.



1. $\overbar{ZY}=$\_\_\_\_\_\_\_\_\_\_\_
2. $\overbar{XZ}=$\_\_\_\_\_\_\_\_\_\_\_
3. $\overbar{WY}=$\_\_\_\_\_\_\_\_\_\_\_
4. $\overbar{WX}=$\_\_\_\_\_\_\_\_\_\_\_

**LMNO is a rectangle. Find the following.**

For 23 and 24. Find the value of x and the length of each diagonal.



23. 

24. *LN =* 3*x +* 1 and *MO* = 8*x* – 4

25. Find the measure of $∠M$\_\_\_\_\_\_\_\_

26. Given the measure of $∠NMO$ is 32⁰.

a) Find the measure of $∠LMO$\_\_\_\_\_\_\_\_\_

 b) Find the measure of $∠LOM$\_\_\_\_\_\_\_\_\_



27. ABCD is a square.

a) Find the measure of angle 2.

b) Find the measure of angle 1.

c) Find the length of side AB.

d) Find the length of DB.

28.

29. Complete this two column proof:

|  |  |
| --- | --- |
| Statements | Reason |
| 1. | Given |
| 2. | The diagonals of a parallelogram bisect each other. |
|   | 4. |
| 3. | 5. |



30. Given: 

 

 Prove:  is a parallelogram

|  |  |
| --- | --- |
| Statement | Reason |
| 1.   | 1.  |
| 2.   | 2.  |
| 3.  | 3.  |
| 4.  | 4.  |
| 5.  | 5.  |
| 6.   | 6.  |
| 7.   | 7.  |
| 8.   | 8.  |
| 9.  is a parallelogram | 9.  |



31. Given:  is a parallelogram

  bisects 

 Prove: is a rhombus

|  |  |
| --- | --- |
| Statement | Reason |
| 1.  bisects  | 1.  |
| 2.   | 2.  |
| 3.   | 3.  |
| 4.   | 4.  |
| 5.   | 5.  |
| 6.  is a parallelogram | 6.  |
| 7.  | 7.  |
| 8.  | 8.  |
| 9. is a rhombus | 9.  |



32. Given:  is a rhombus

 Prove:  bisects 



|  |  |
| --- | --- |
| Statement | Reason |
| 1.  is a rhombus | 1.  |
| 2.   | 2.  |
| 3.   | 3.  |
| 4.   | 4.  |
| 5.  and   | 5.  |
| 6.  bisects  | 6.  |

33. Given:  is a parallelogram

 Prove: 

|  |  |
| --- | --- |
| Statement | Reason |
| 1.  is a parallelogram | 1.  |
| 2.   | 2.  |
| 3.   | 3.  |
| 4.   | 4.  |
| 5.   | 5.  |
| 6.   | 6.  |
| 7.   | 7.  |

34. Given:  is a rectangle

 

 

 Prove: 

|  |  |
| --- | --- |
| Statement | Reason |
| 1.  is a rectangle | 1.  |
| 2.   | 2.  |
| 3.   | 3.  |
| 4. ,  | 4.  |
| 5.   | 5.  |
| 6.   | 6.  |
| 7.   | 7.  |
| 8.   | 8.  |



35. Given:  and 

 Prove:  is a parallelogram

|  |  |
| --- | --- |
| Statement | Reason |
| 1.  and  | 1.  |
| 2.   | 2.  |
| 3.   | 3.  |
| 4.   | 4.  |
| 5.   | 5.  |
| 6.  are supplementary are supplementary | 6.  |
| 7.   | 7.  |
| 8.  is a parallelogram | 8.  |