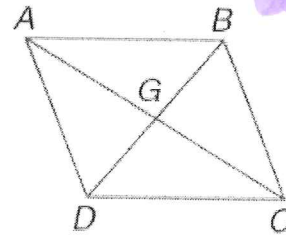


Answers only  
MUST show work

Complete each statement about  $\square ABCD$ .  
Justify your answer.

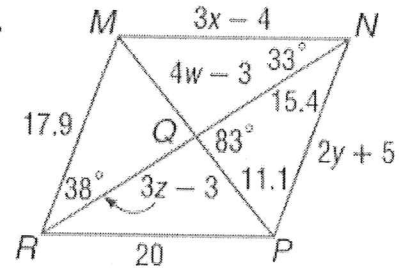
15.  $\angle DAB \cong$  ?.  
16.  $\angle ABD \cong$  ?.  
17.  $\overline{AB} \parallel$  ?.  
18.  $\overline{BG} \cong$  ?.  
19.  $\triangle ABD \cong$  ?.  
20.  $\angle ACD \cong$  ?.



*we will go over in class if needed.*

ALGEBRA Use  $\square MNPR$  to find each measure or value.  
Round to the nearest tenth if necessary.

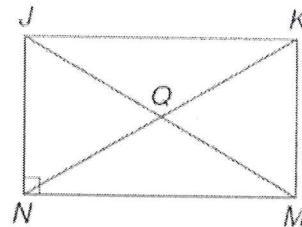
21.  $m\angle MNP$   $71^\circ$   
22.  $m\angle NRP$   $33^\circ$   
23.  $m\angle RNP$   $38^\circ$   
24.  $m\angle RMN$   $109^\circ$   
25.  $m\angle MQN$   $97^\circ$   
26.  $m\angle MQR$   $83^\circ$   
27.  $x$   $8$   
28.  $y$   $6.5$   
29.  $w$   $3.5$   
30.  $z$   $6.1$



Pg 345 ALGEBRA Quadrilateral JKMN is a rectangle.

7. If  $NQ = 5x - 3$  and  $QM = 4x + 6$ , find  $NK$ .

$NK = 84$



9. If  $NM = 8x - 14$  and  $JK = x^2 + 1$ , find  $JK$ .

$JK = 10$  or  $JK = 26$

10. If  $m\angle NJM = 2x - 3$  and  $m\angle KJM = x + 5$ , find  $x$ .

$x = 29\frac{1}{3}$  or  $\frac{88}{3}$

11. If  $m\angle NKM = x^2 + 4$  and  $m\angle KNM = x + 30$ , find  $m\angle JKN$ .

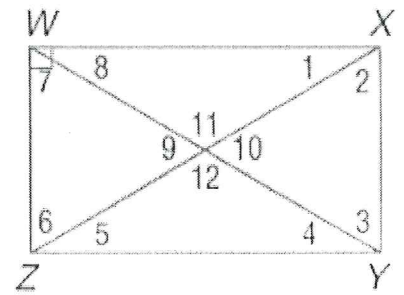
$\angle JKN = 22^\circ$  or  $\angle JKN = 37^\circ$

12. If  $m\angle JKN = 2x^2 + 2$  and  $m\angle NKM = 14x$ , find  $x$ .

$x = 4$

WXYZ is a rectangle. Find each measure if  $m\angle 1 = 30^\circ$ .

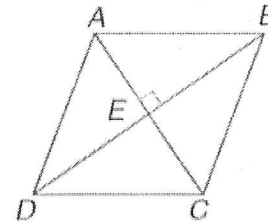
13.  $m\angle 2$   $60^\circ$     14.  $m\angle 3$   $60^\circ$     15.  $m\angle 4$   $30^\circ$   
 16.  $m\angle 5$   $30^\circ$     17.  $m\angle 6$   $60^\circ$     18.  $m\angle 7$   $60^\circ$   
 19.  $m\angle 8$   $30^\circ$     20.  $m\angle 9$   $60^\circ$     21.  $m\angle 12$   $120^\circ$



Pg 351

**ALGEBRA** In rhombus ABCD,  $AB = 2x + 3$  and  $BC = 5x$ .

2. Find  $x$ .  $1$   
 3. Find  $AD$ .  $5$   
 4. Find  $m\angle AEB$ .  $90^\circ$   
 5. Find  $m\angle BCD$  if  $m\angle ABC = 83.2$ .  $96.8^\circ$



Complete the following on a separate paper and show all of your work!

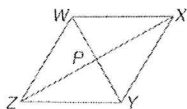
**COORDINATE GEOMETRY** Given each set of vertices, determine whether  $\square MNPQ$  is a rhombus, a rectangle, or a square. List all that apply. Explain your reasoning.

6.  $M(0, 3), N(-3, 0), P(0, -3), Q(3, 0)$  *Rect., Rhombus, square all classify as Parallelograms*  
 7.  $M(-4, 0), N(-3, 3), P(2, 2), Q(1, -1)$   
*None ☺*

**PROOF** Write a two-column proof.

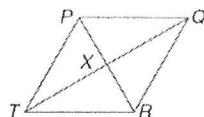
11. **Given:**  $\triangle WZY \cong \triangle WXY$ ,  $\triangle WZY$  and  $\triangle XYZ$  are isosceles.

**Prove:** WXYZ is a rhombus.



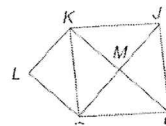
12. **Given:**  $\triangle TPX \cong \triangle QPX \cong \triangle QRX \cong \triangle TRX$

**Prove:** TPQR is a rhombus.

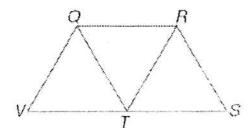


13. **Given:**  $\triangle LCK \cong \triangle MJK$   
 GHJK is a parallelogram.

**Prove:** GHJK is a rhombus.



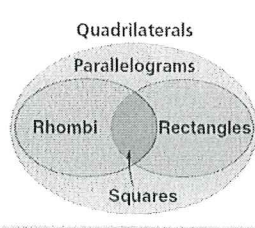
14. **Given:** QRST and QRTV are rhombi.  
**Prove:**  $\triangle QRT$  is equilateral.



(ANS: SEE NEXT PAGE)

Use the Venn diagram to determine whether each statement is *always*, *sometimes*, or *never* true.

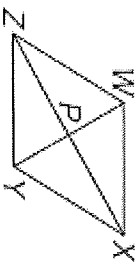
30. A parallelogram is a square. **S**  
 31. A square is a rhombus. **A**  
 32. A rectangle is a parallelogram. **A**  
 33. A rhombus is a rectangle but not a square. **N**  
 34. A rhombus is a square. **S**



**ACT QUESTIONS**  
 COVER THIS A LOT

11. Given:  $\triangle WZY \cong \triangle WXY$   
 $\triangle WZY$  and  $\triangle XYZ$  are isosceles.

Prove:  $WXYZ$  is a rhombus.



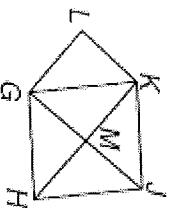
Proof:

Statements (Reasons)

- $\triangle WZY \cong \triangle WXY$ ;  $\triangle WZY$  and  $\triangle XYZ$  are isosceles. (Given)
- $\overline{WZ} \cong \overline{WX}$ ,  $\overline{ZY} \cong \overline{XY}$  (CPCTC)
- $\overline{WZ} \cong \overline{ZY}$ ,  $\overline{WX} \cong \overline{XY}$  (Def. of isosceles  $\triangle$ )
- $\overline{WZ} \cong \overline{WX} \cong \overline{ZY} \cong \overline{XY}$  (Substitution Property)
- $WXYZ$  is a rhombus. (Def. of rhombus)

13. Given:  $\triangle LGK \cong \triangle MKJ$   
 $GHJK$  is a parallelogram.

Prove:  $GHJK$  is a rhombus.

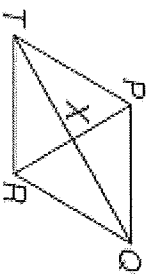


Proof:

Statements (Reasons)

- $\triangle LGK \cong \triangle MKJ$ ;  $GHJK$  is a parallelogram. (Given)
- $\overline{KG} \cong \overline{KJ}$  (CPCTC)
- $\overline{KJ} \cong \overline{GH}$ ,  $\overline{KG} \cong \overline{JH}$  (Opp. sides of  $\square$  are  $\cong$ .)
- $\overline{KG} \cong \overline{JH} \cong \overline{GH} \cong \overline{JK}$  (Substitution Property)
- $GHJK$  is a rhombus. (Def. of rhombus)

12. Given:  $\triangle TPX \cong \triangle OPX \cong \triangle ORX \cong \triangle TRX$   
Prove:  $TPQR$  is a rhombus.

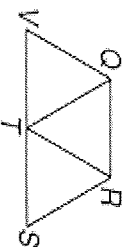


Proof:

Statements (Reasons)

- $\triangle TPX \cong \triangle OPX \cong \triangle ORX \cong \triangle TRX$  (Given)
- $\overline{TP} \cong \overline{PQ} \cong \overline{QR} \cong \overline{TR}$  (CPCTC)
- $TPQR$  is a rhombus. (Def. of rhombus)

14. Given:  $ORST$  and  $QRTV$  are rhombi.  
Prove:  $\triangle ORT$  is equilateral.



Proof:

Statements (Reasons)

- $ORST$  and  $QRTV$  are rhombi. (Given)
- $\overline{OT} \cong \overline{OR} \cong \overline{TR} \cong \overline{OR}$ ,  $\overline{OR} \cong \overline{TS} \cong \overline{RS} \cong \overline{OT}$  (Def. of rhombus)
- $\overline{TR} \cong \overline{OR} \cong \overline{OT}$  (Transitive Property)
- $\triangle ORT$  is equilateral. (Def. of equilateral triangle)