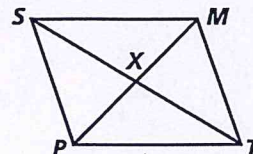


Practice 6-3

Proving That a Quadrilateral Is a Parallelogram

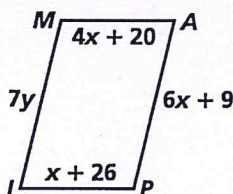
State whether the information given about quadrilateral $SMTP$ is sufficient to prove that it is a parallelogram.



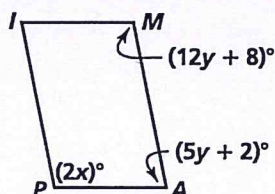
1. $\angle SPT \cong \angle SMT$ _____
2. $\angle SPX \cong \angle TMX$, $\angle TPX \cong \angle SMX$ _____
3. $\overline{SM} \cong \overline{PT}$, $\overline{SP} \cong \overline{MT}$ _____
4. $\overline{SP} \cong \overline{MT}$, $\overline{SP} \parallel \overline{MT}$ _____

Algebra Find the values of x and y for which the figure must be a parallelogram.

5. $x =$ _____, $y =$ _____

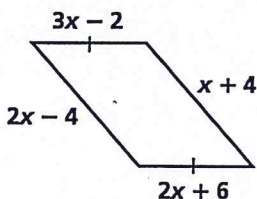


6. $x =$ _____, $y =$ _____

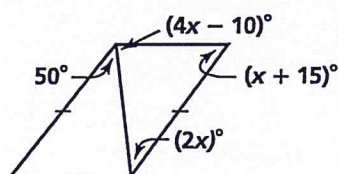


Algebra Find the value of x . Then tell whether the figure must be a parallelogram. Explain your answer.

7. _____

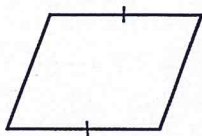


8. _____

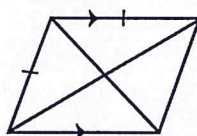


Decide whether the quadrilateral is a parallelogram. Explain your answer.

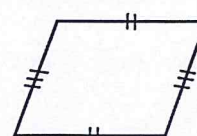
9. _____



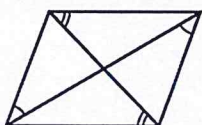
10. _____



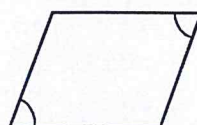
11. _____



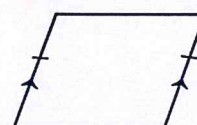
12. _____



13. _____



14. _____

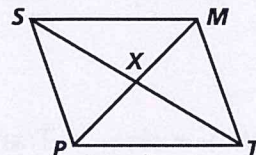


Name _____ Class _____ Date _____

Practice 6-3

Proving That a Quadrilateral Is a Parallelogram

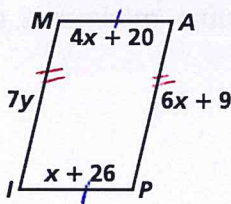
State whether the information given about quadrilateral $SMT P$ is sufficient to prove that it is a parallelogram.



- $\angle SPT \cong \angle SMT$ NO
- $\angle SPX \cong \angle TMX, \angle TPX \cong \angle SMX$ YES
- $\overline{SM} \cong \overline{PT}, \overline{SP} \cong \overline{MT}$ YES
- $\overline{SP} \cong \overline{MT}, \overline{SP} \parallel \overline{MT}$ YES

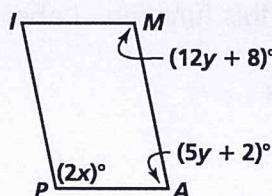
Algebra Find the values of x and y for which the figure must be a parallelogram.

5. $x = 2, y = 3$



$$\begin{aligned} 4x + 20 &= x + 26 \\ 3x &= 6 \\ x &= 2 \\ 7y &= 6(2) + 9 \\ 7y &= 21 \\ y &= 3 \end{aligned}$$

6. $x = 64, y = 10$

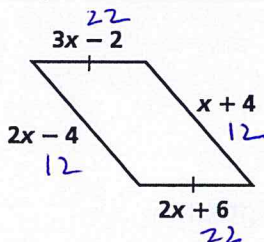


$$\begin{aligned} 12y + 8 + 5y + 2 &= 180 \\ 17y + 10 &= 180 \\ 17y &= 170 \\ y &= 10 \end{aligned}$$

$$\begin{aligned} 2x + 5(10) + 2 &= 180 \\ 2x + 52 &= 180 \\ 2x &= 128 \\ x &= 64 \end{aligned}$$

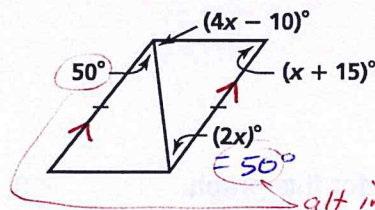
Algebra Find the value of x . Then tell whether the figure must be a parallelogram. Explain your answer.

7. This is a 11-gram because opp sides are $\cong$



$$\begin{aligned} 3x - 2 &= 2x + 6 \\ x &= 8 \end{aligned}$$

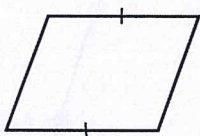
8. Yes, this is a 11-gram because one pair of sides is both $\cong$ & $\parallel$.



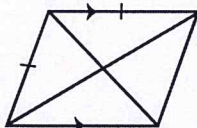
$$\begin{aligned} 4x - 10 + x + 15 + 2x &= 180 \\ 7x + 5 &= 180 \\ 7x &= 175 \\ x &= 25 \end{aligned}$$

Decide whether the quadrilateral is a parallelogram. Explain your answer.

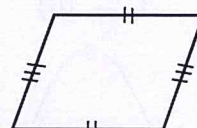
9. NOT ENOUGH INFORMATION



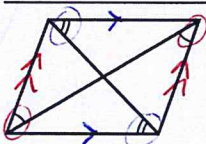
10. NOT ENOUGH INFORMATION



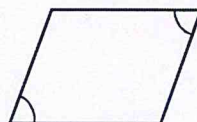
11. Yes - opp sides $\cong$



12. Yes, opp sides $\parallel$



13. NOT ENOUGH INFORMATION



14. Yes, one pair of opp sides is both $\cong$ & $\parallel$

