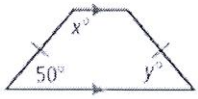
Parallelogram Proof Practice

Name: Key!

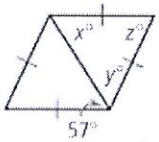
Algebra Find the values of the variables for each quadrilateral.

6.



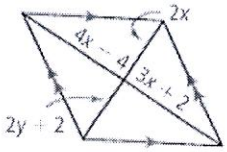
x = 130°
y = 50°

7.



x = 57°
y = 57°
z = 66°

8.



4x − 4 = 3x + 2

x = 6

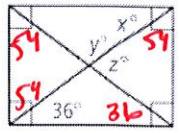
2x = 2y + 2

12 = 2y + 2

10 = 2y

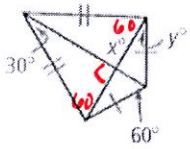
y = 5

9.



x = 36°
y = 108°
z = 72°

10.

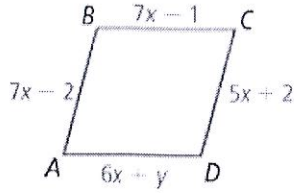


x = 90°
y = 30°

11.

x = 100°
y = 50°
z = 40°

12. **Algebra** Determine the values of the variables for which *ABCD* is a parallelogram.



7x − 2 = 5x + 2

2x = 4

x = 2

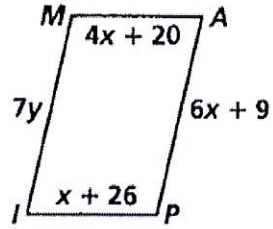
7x − 1 = 6x + y

13 = 12 + y

y = 1

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

7.



4x + 20 = x + 26

3x = 6

x = 2

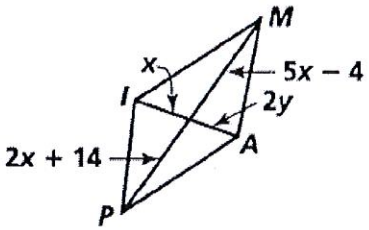
7y = 6x + 9

7y = 12 + 9

7y = 21

y = 3

8.



x = 2y

6 = 2y

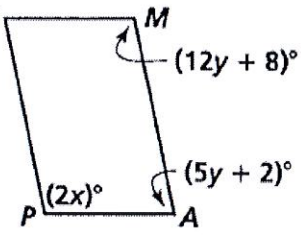
y = 3

5x − 4 = 2x + 14

3x = 18

x = 6

9.



2x = 12y + 8

2x = 128

x = 64

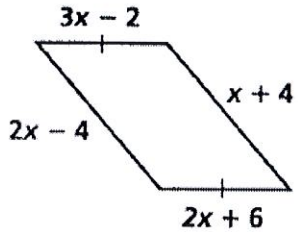
17y + 10 = 180

17y = 170

y = 10

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

10.



3x − 2 = 2x + 6

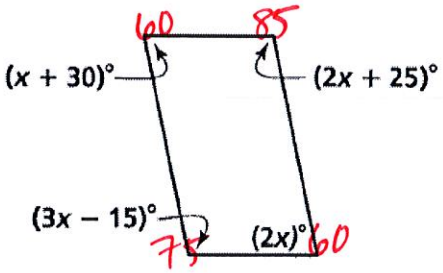
x = 8

✓

2x − 4 = x + 4

x = 8

11.

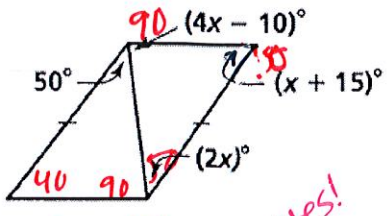


2x = x + 30

x = 30

No!

12.

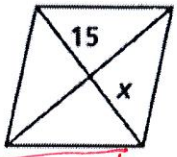


2x = 50

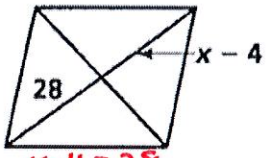
x = 25

yes!

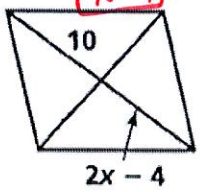
Find the value of x in each parallelogram.

1. 

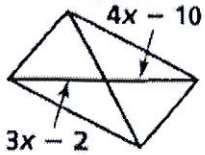
$x = 15$

2. 

$x - 4 = 28$
$x = 32$

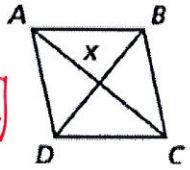
3. 

$2x - 4 = 10$
$2x = 14$
$x = 7$

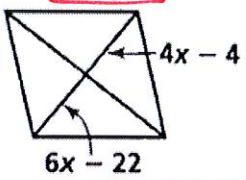
4. 

$3x - 2 = 4x - 10$
$8 = x$

5. $AC = 24$

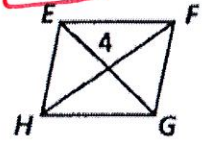


$x = 12$

6. 

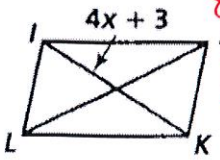
$6x - 22 = 4x - 4$
$2x = 18$
$x = 9$

7. $x = EG$



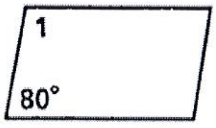
$x = 8$

8. $IK = 35$

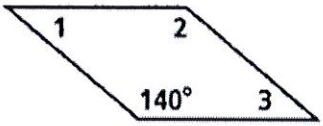


$8x + 6 = 35$
$8x = 29$
$x = 3.6$

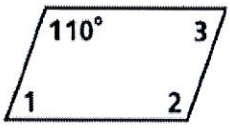
Find the measures of the numbered angles for each parallelogram.

13. 

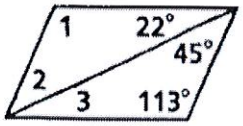
$\angle 1 = 100°$

14. 

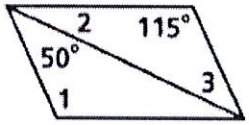
$\angle 1 = 40°$
$\angle 2 = 140°$
$\angle 3 = 40°$

15. 

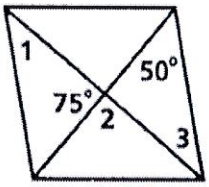
$\angle 1 = 70°$
$\angle 2 = 110°$
$\angle 3 = 70°$

16. 

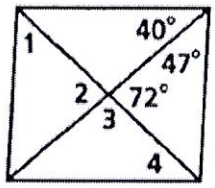
$\angle 1 = 113°$
$\angle 2 = 45°$
$\angle 3 = 22°$

17. 

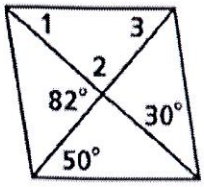
$\angle 1 = 115°$
$\angle 2 = 15°$
$\angle 3 = 50°$

18. 

$\angle 1 = 55°$
$\angle 2 = 105°$
$\angle 3 = 55°$

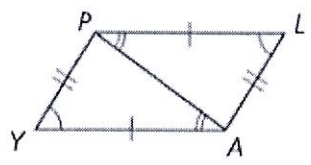
19. 

$\angle 1 = 61°$ $\angle 3 = 108°$
$\angle 2 = 72°$ $\angle 4 = 32°$

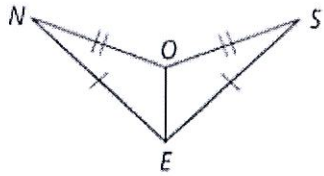
20. 

$\angle 1 = 32°$
$\angle 2 = 98°$
$\angle 3 = 50°$

Write a congruence statement for each pair of triangles.

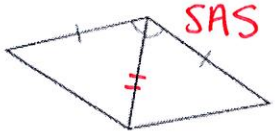
1. 

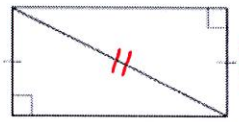
$\triangle YAP \cong \triangle LPA$

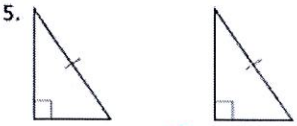
2. 

$\triangle ENO \cong \triangle ESO$

Which postulate or theorem, if any, could you use to prove the two triangles congruent? If not enough information is given, write *not enough information*.

3. 
SAS

4. 
HL

5. 
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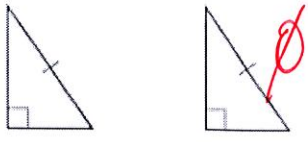
5. 
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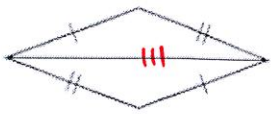
6. 
SSS

7. 
ASA