

Parallelograms and Similarity Review

Fill in the blanks.

1. In a parallelogram,

Opposite sides are _____.

Opposite angles are _____.

Consecutive angles are _____.

The diagonals _____.

2. A rectangle is a parallelogram with _____ diagonals.

Fill in the blanks.

3. A _____ is a transformation that changes the size of a figure.

4. When the scale factor is between 0 and 1, the figure is made _____.

5. When the scale factor is 1, the figure is _____.

6. When the scale factor is greater than 1, the figure is made _____.

Parallelograms and Similarity Review

Fill in the blanks.

7. Two figures are similar if there is a _____

_____.

8. In similar figures, the corresponding angles are
_____ and the corresponding sides are

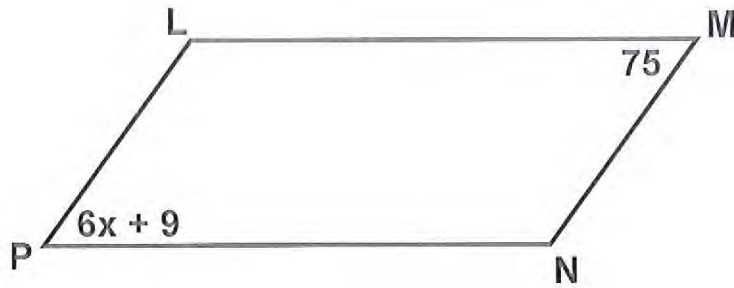
_____.

9. Why do the triangle similarity theorems exist??

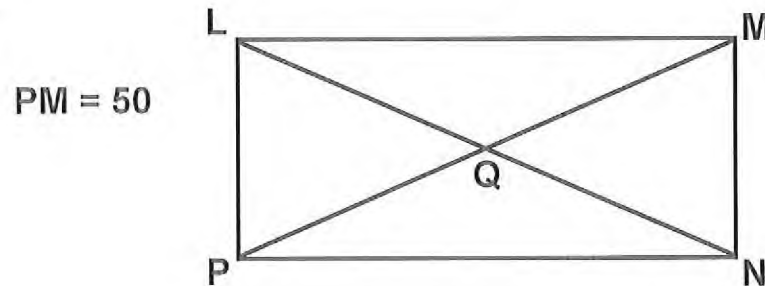
10. Name all of the triangle similarity theorems.

Parallelograms and Similarity Review

11. LMNP is a parallelogram. Find the value of x .

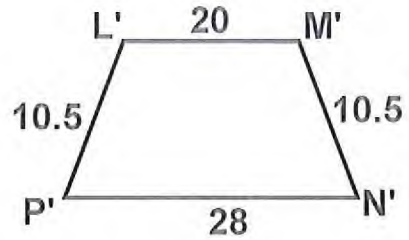
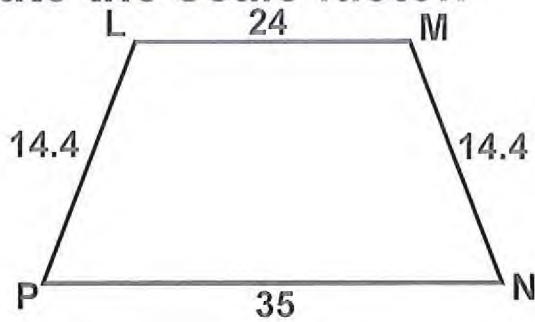


12. LMNP is a rectangle. Find the length of QN.

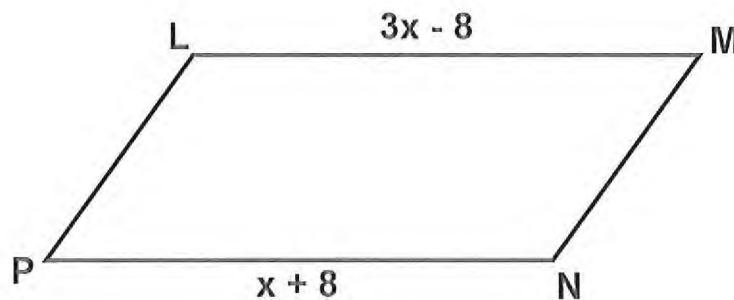


Parallelograms and Similarity Review

13. Are the polygons similar? If they are, state the scale factor.

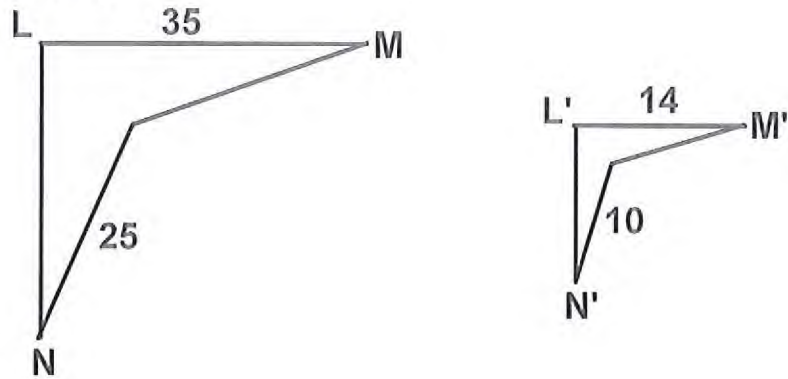


14. LMNP is a parallelogram. Find the value of x .

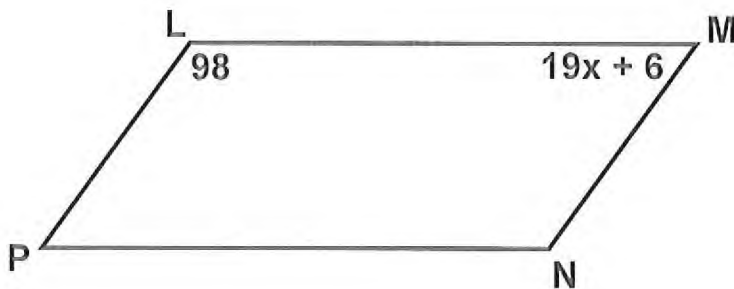


Parallelograms and Similarity Review

15. The two figures are similar. Find the scale factor.

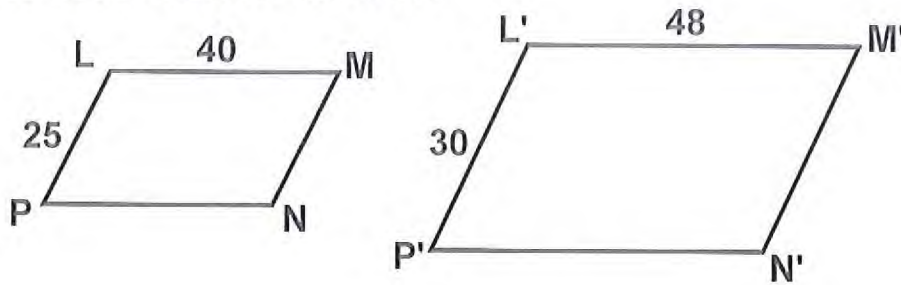


16. LMNP is a parallelogram. Find the value of x .

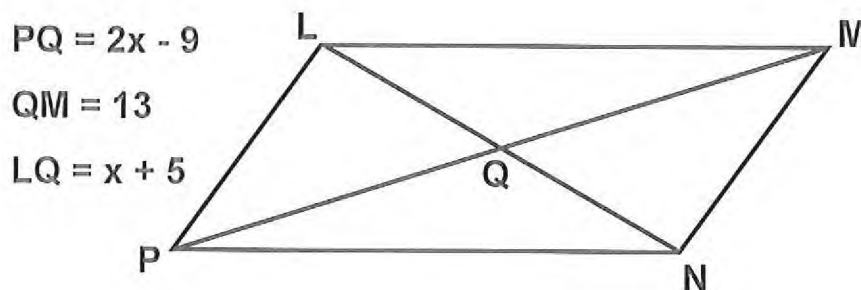


Parallelograms and Similarity Review

17. Are the polygons similar? If they are, state the scale factor.

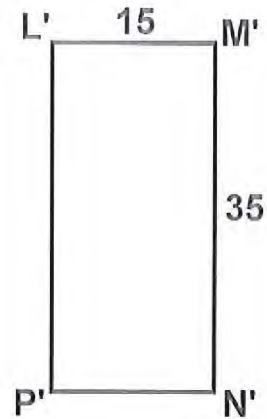
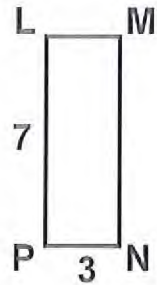


18. $LMNP$ is a parallelogram. Find the value of x .

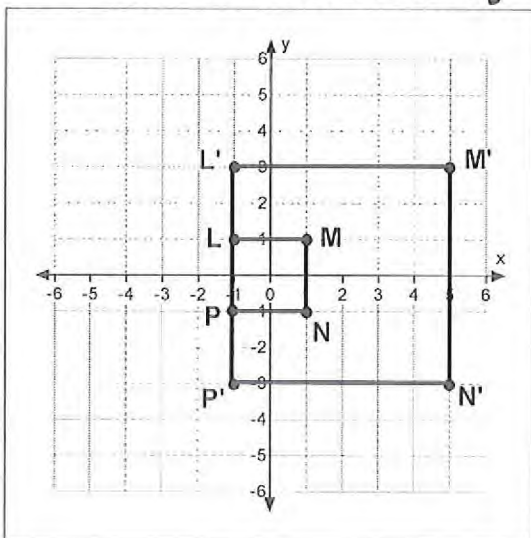


Parallelograms and Similarity Review

19. The two figures are similar. Find the scale factor.

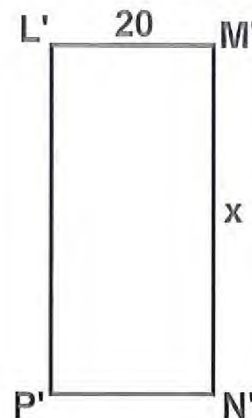
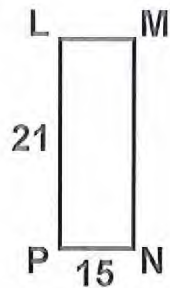


20. Are the two figures similar? Explain why or why not using the definition of similarity in terms of similarity transformations.

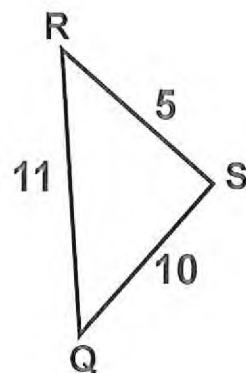
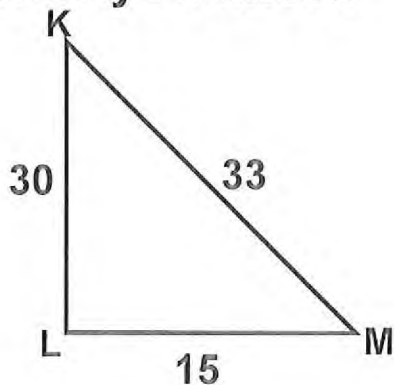


Parallelograms and Similarity Review

21. The two figures are similar. Find the value of x .

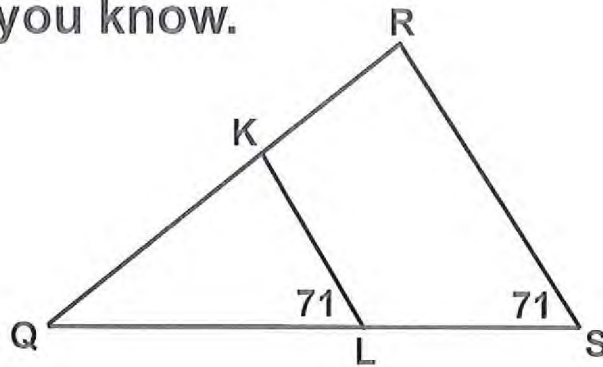


22. Are the two triangles similar? If they are, tell how you know.

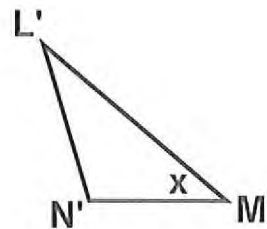
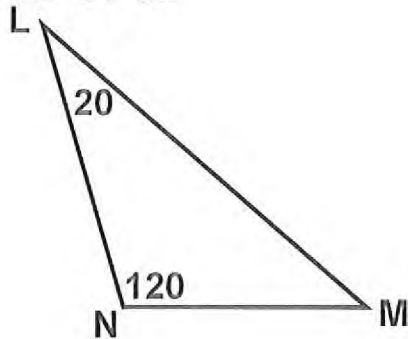


Parallelograms and Similarity Review

23. Are the two triangles similar? If they are, tell how you know.

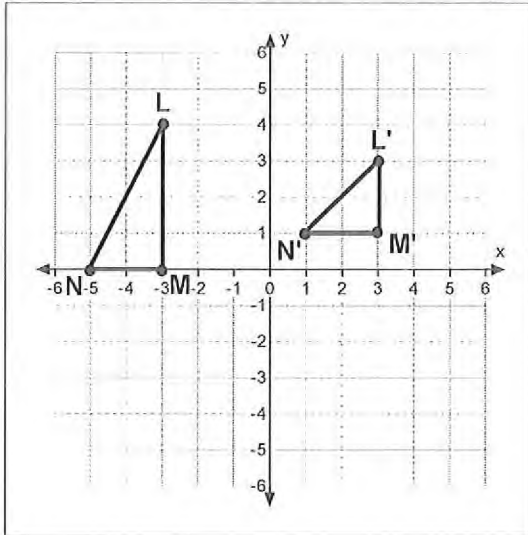


24. The two figures are similar. Find the value of x .

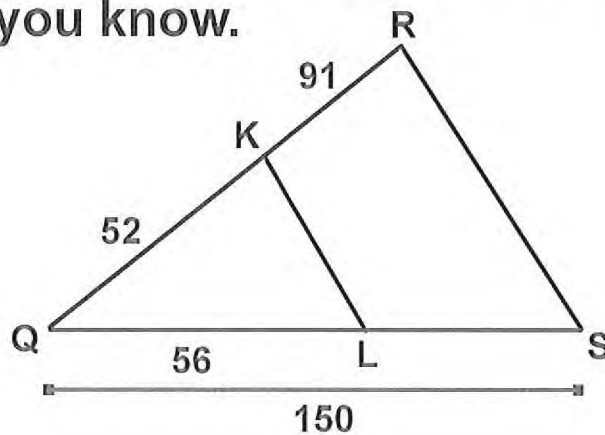


Parallelograms and Similarity Review

25. Are the two figures similar? Explain why or why not using the definition of similarity in terms of similarity transformations.

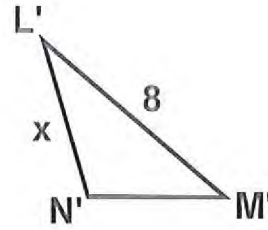
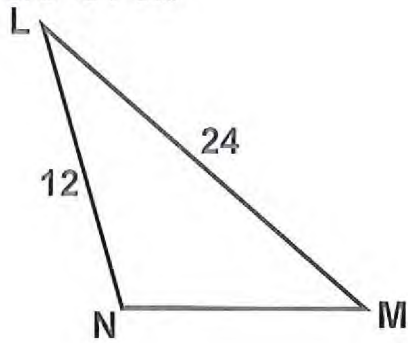


26. Are the two triangles similar? If they are, tell how you know.



Parallelograms and Similarity Review

27. The two figures are similar. Find the value of x .



Parallelograms and Similarity Review

Fill in the blanks.

1. In a parallelogram,

Opposite sides are congruent.

Opposite angles are congruent.

Consecutive angles are supplementary.

The diagonals bisect each other.

2. A rectangle is a parallelogram with congruent diagonals.

Fill in the blanks.

3. A dilation is a transformation that changes the size of a figure.

4. When the scale factor is between 0 and 1, the figure is made smaller.

5. When the scale factor is 1, the figure is the same size.

6. When the scale factor is greater than 1, the figure is made larger.

Parallelograms and Similarity Review

Fill in the blanks.

7. Two figures are similar if there is a sequence of similarity transformations that maps one figure onto the other.

8. In similar figures, the corresponding angles are congruent and the corresponding sides are proportional.

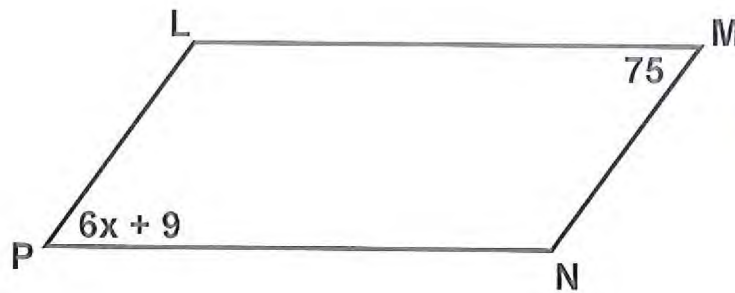
9. Why do the triangle similarity theorems exist??
to determine if two triangles are similar

10. Name all of the triangle similarity theorems.

SSS , SAS , AA

Parallelograms and Similarity Review

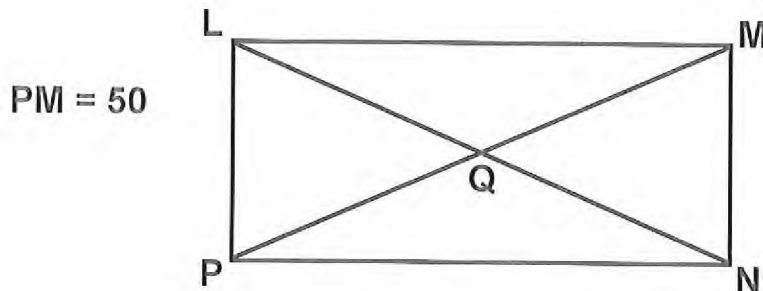
11. LMNP is a parallelogram. Find the value of x .



* opposite angles are congruent

$$\begin{aligned}\angle P &= \angle M \\ 6x + 9 &= 75 \\ -9 &\quad -9 \\ \hline 6x &= 66 \\ \frac{6x}{6} &= \frac{66}{6} \\ \hline x &= 11\end{aligned}$$

12. LMNP is a rectangle. Find the length of QN.



* in a rectangle the diagonals are congruent + the diagonals bisect each other

$$PM = LN$$

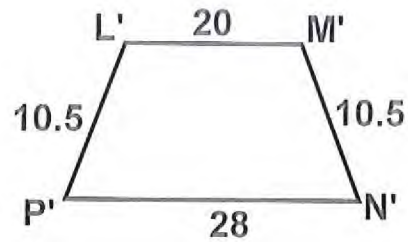
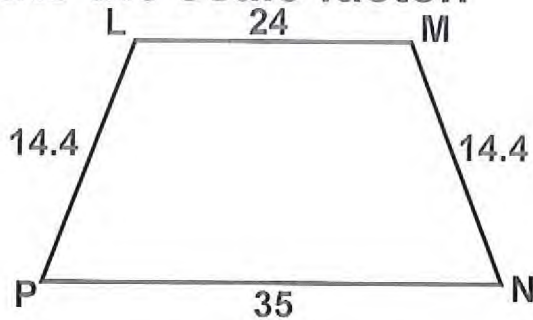
$$PQ = QM = LQ = QN$$

Since, $PM = 50$, both PQ and QM are 25

$$\text{So... } \boxed{QN = 25}$$

Parallelograms and Similarity Review

13. Are the polygons similar? If they are, state the scale factor.



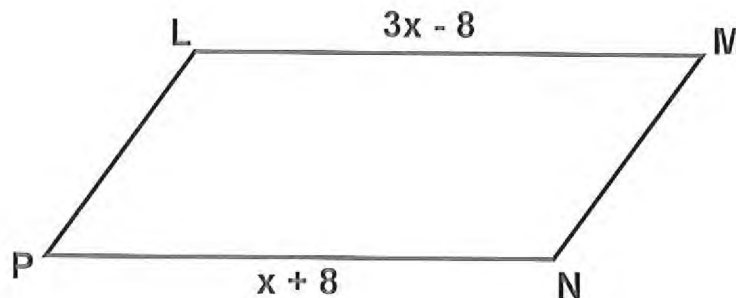
* NEW
ORIGINAL

$$\frac{10.5}{14.4} = \frac{20}{24} = \frac{28}{35}$$

.72916̄ .83̄ .8

No, they are not

14. LMNP is a parallelogram. Find the value of x.

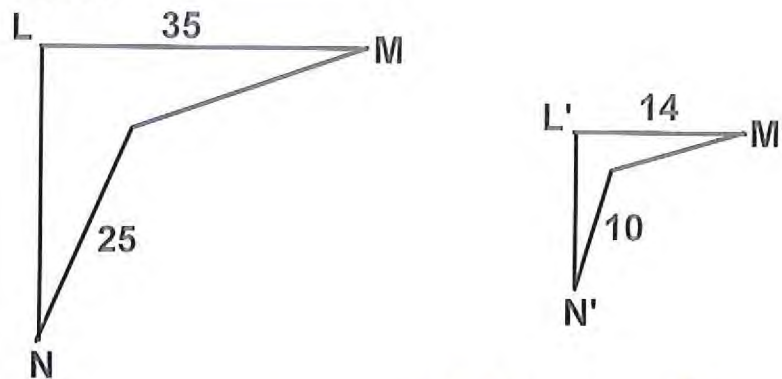


* opposite sides are congruent

$$\begin{aligned} LM &= PN \\ 3x - 8 &= x + 8 \\ -x & \quad -x \\ 2x - 8 &= 8 \\ +8 & \quad +8 \\ 2x &= 16 \\ \frac{2x}{2} &= \frac{16}{2} \\ x &= 8 \end{aligned}$$

Parallelograms and Similarity Review

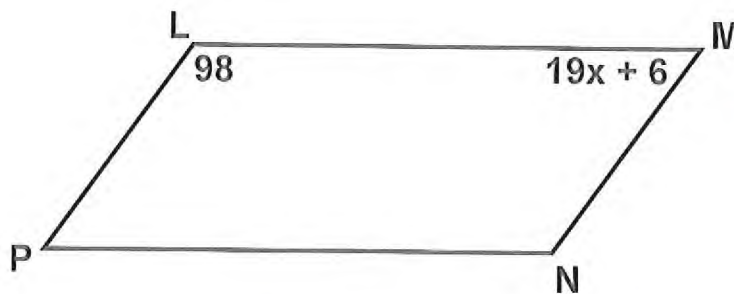
15. The two figures are similar. Find the scale factor.



$$SF = \frac{NEW}{ORIGINAL} = \frac{14}{35} \text{ OR } \frac{10}{25}$$

0.4
or
 $\frac{2}{5}$

16. LMNP is a parallelogram. Find the value of x.

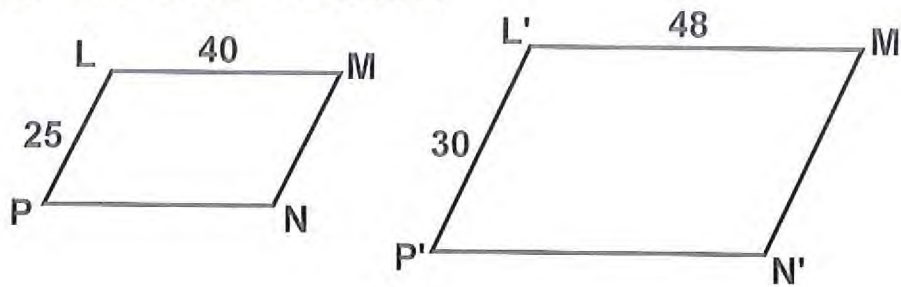


* consecutive angles are ~~con~~ supplementary

$$\begin{aligned} 98 + 19x + 6 &= 180 \\ 19x + 104 &= 180 \\ -104 \quad -104 & \\ \hline 19x &= 76 \\ \frac{19x}{19} &= \frac{76}{19} \\ \hline x &= 4 \end{aligned}$$

Parallelograms and Similarity Review

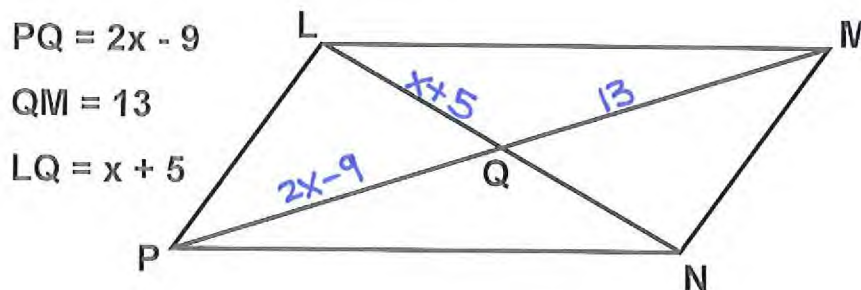
17. Are the polygons similar? If they are, state the scale factor.



$$\frac{48}{40} = \frac{30}{25} ?$$
$$1.2 \quad 1.2$$

Yes! $SF = 1.2$ or $\frac{6}{5}$

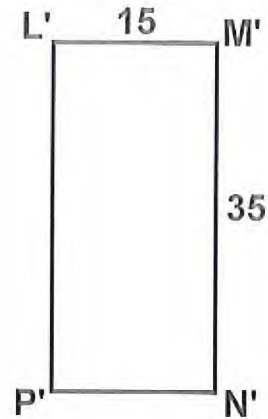
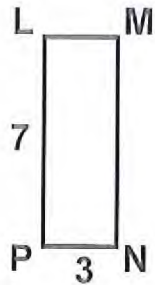
18. $LMNP$ is a parallelogram. Find the value of x .



$$PQ = QM$$
$$2x - 9 = 13$$
$$+9 \quad +9$$
$$2x = 22$$
$$\frac{2x}{2} = \frac{22}{2}$$
$$x = 11$$

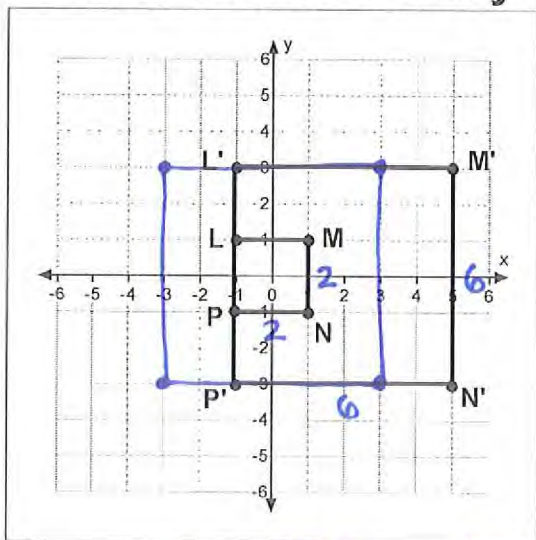
Parallelograms and Similarity Review

19. The two figures are similar. Find the scale factor.



$$SF = \frac{NEW}{ORIGINAL} = \frac{15}{3} = \frac{35}{7} = 5$$

20. Are the two figures similar? Explain why or why not using the definition of similarity in terms of similarity transformations.

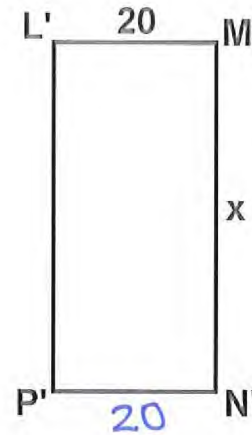


Yes, LMNP was dilated by a factor of 3 and translated right 2 units to create L'M'N'P'.

$$SF = \frac{NEW}{ORIGINAL} = \frac{6}{2} = \frac{3}{1} = 3$$

Parallelograms and Similarity Review

21. The two figures are similar. Find the value of x .



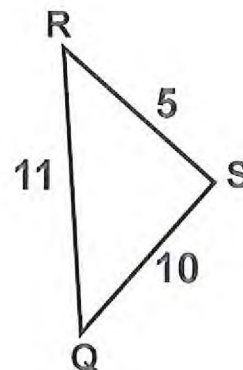
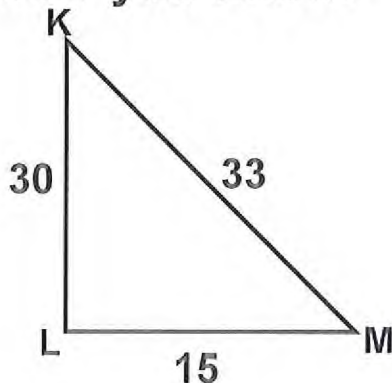
$$SF = \frac{20}{15} = \frac{4}{3}$$

$$21 \cdot SF = X$$

$$21 \cdot \frac{4}{3} = X$$

$$28 = X$$

22. Are the two triangles similar? If they are, tell how you know.



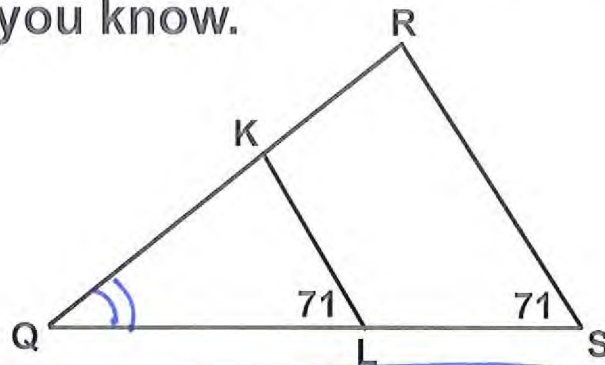
$$\frac{11}{33} = \frac{5}{15} = \frac{10}{30} \quad ?$$

$\cdot\overline{3} \quad \cdot\overline{3} \quad \cdot\overline{3}$

Yes, SSS similarity

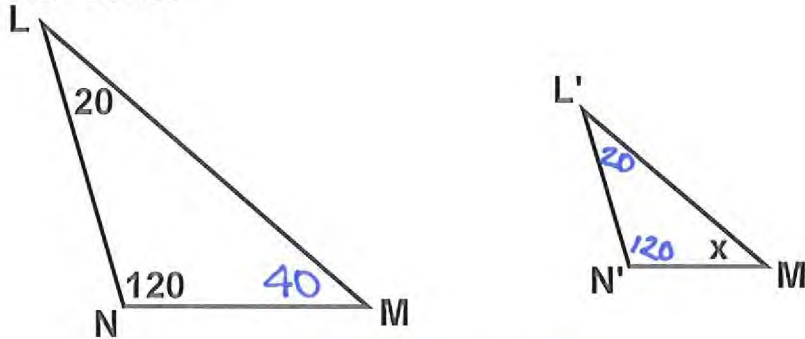
Parallelograms and Similarity Review

23. Are the two triangles similar? If they are, tell how you know.



Yes, AA similarity

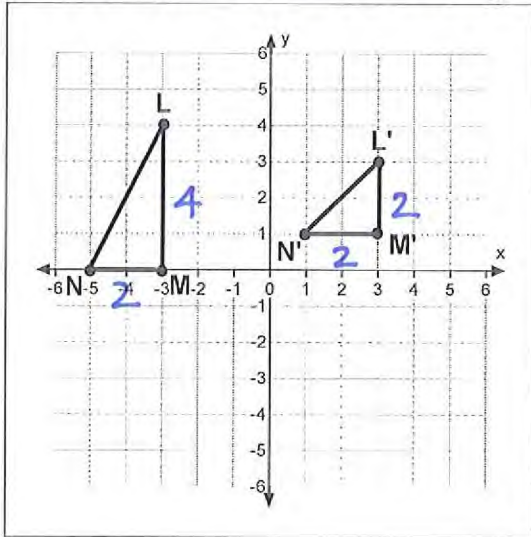
24. The two figures are similar. Find the value of x .



$x = 40^\circ$

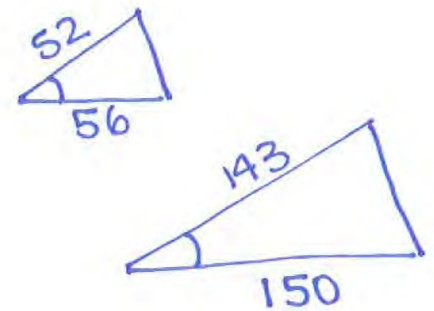
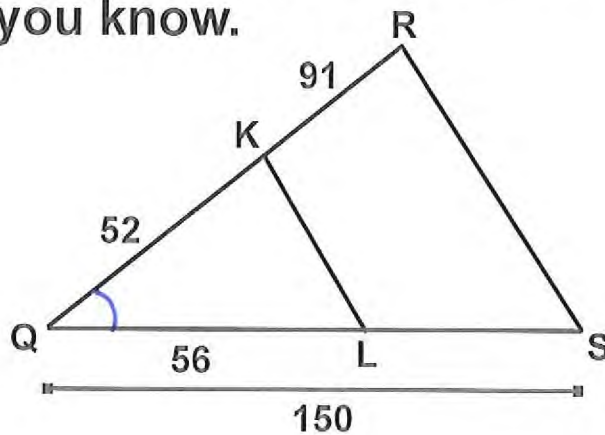
Parallelograms and Similarity Review

25. Are the two figures similar? Explain why or why not using the definition of similarity in terms of similarity transformations.



No, there is no sequence of similarity transformations that will map LMN onto L'M'N'.

26. Are the two triangles similar? If they are, tell how you know.



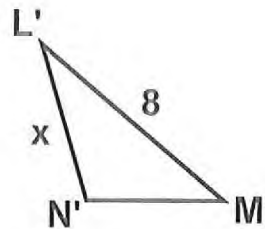
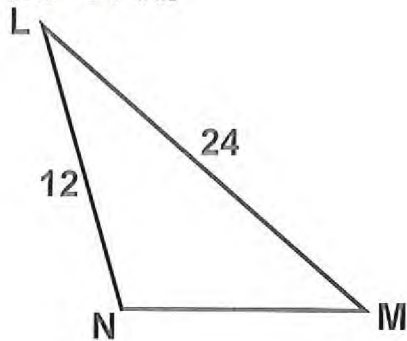
NOT SIMILAR

$$\frac{143}{52} = \frac{150}{56} ?$$

$$2.75 = 2.6786 X$$

Parallelograms and Similarity Review

27. The two figures are similar. Find the value of x .



$$\frac{24 \cdot SF}{24} = \frac{8}{24}$$

$$SF = \frac{8}{24} = \frac{1}{3}$$

$$12 \cdot \frac{1}{3} = x$$

$$\boxed{4 = x}$$