

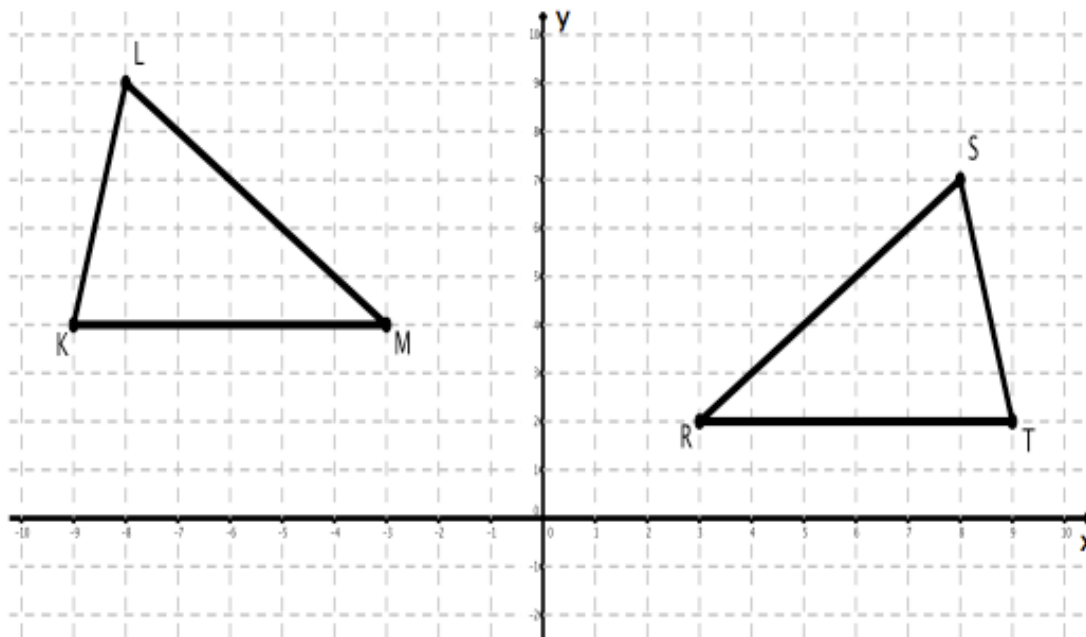
Transformational Geometry Worksheet

Tasks 1a + 1b

Task #1a

Which sequence of transformations carries $\triangle KLM$ to $\triangle TSR$?

- A) reflection over the x-axis and translation 2 units down
- B) reflection over the y-axis and translation 2 units down
- C) translation 2 units down and 90° rotation about the origin
- D) translation 12 units right and 90° rotation about the origin

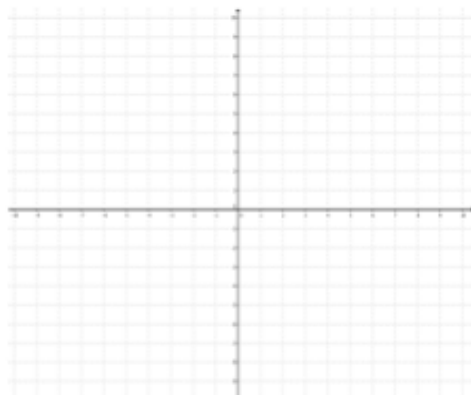


Task #1b

For each of the *incorrect* choices in Task #1a, carry out the transformation and describe how the resulting image is different from $\triangle TSR$.

Task #2

$\triangle ABC$ is rotated 90° clockwise about the origin to form $\triangle DEF$. $\triangle DEF$ is transformed by a dilation centered at the origin, with scale factor 4. The result is $\triangle QRS$. (You may use the space below.)



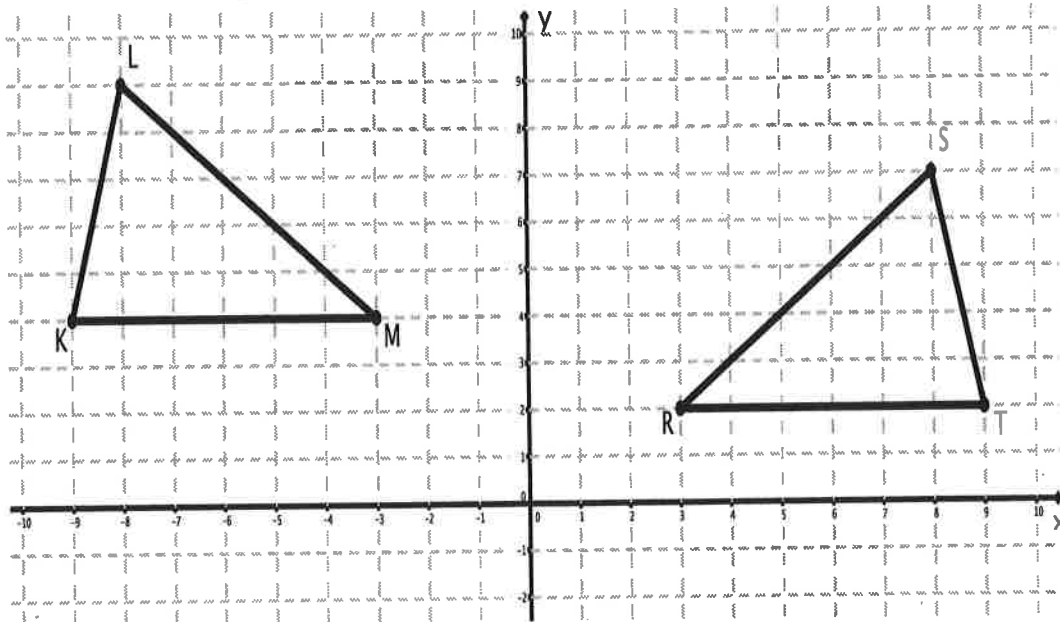
Part 1: What parts of $\triangle QRS$ are congruent to the corresponding parts of $\triangle ABC$? Explain your reasoning.

Part 2: What is the relationship between the perimeter of $\triangle QRS$ and $\triangle ABC$? Explain your reasoning.

Task #1

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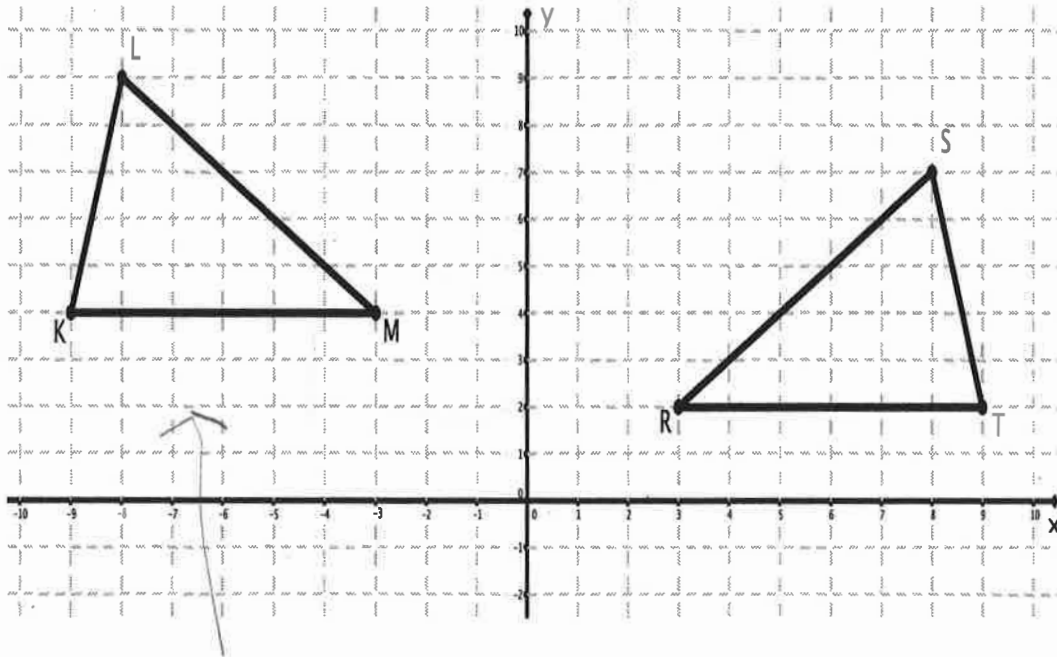


1. I'm not really sure what $\triangle KLM$, $\triangle TSR$ are
2. Why I think B because it is two down from the first one on the y axis and I didn't really know how to do them so this made the most sense

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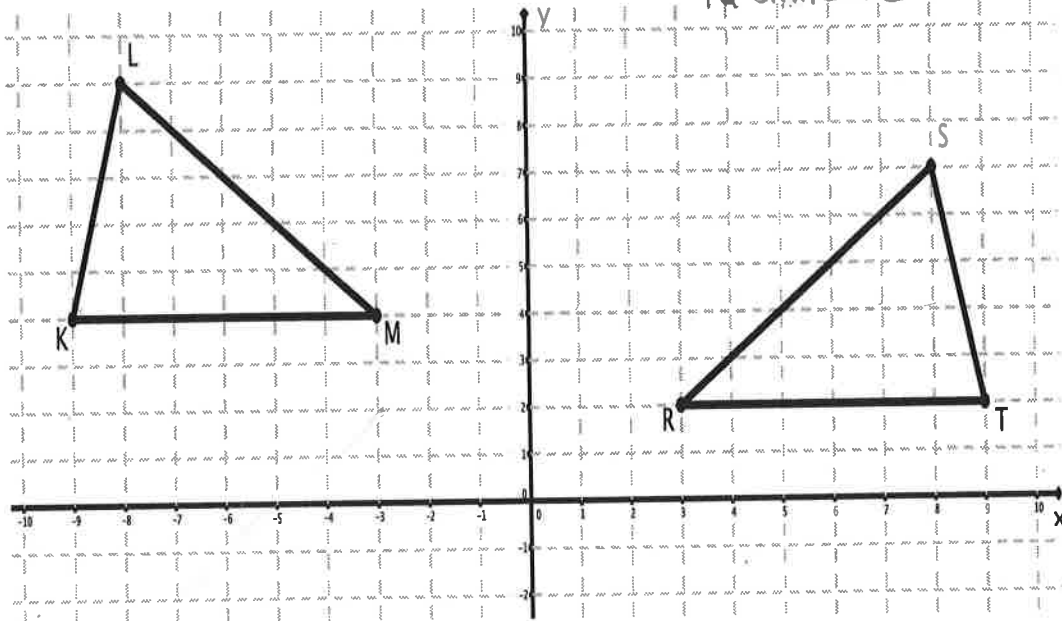


Move this down 2
and if you flip it right it would
match up.

Task #1

Which sequence of transformations carries $\triangle KLM$ to $\triangle TSR$?

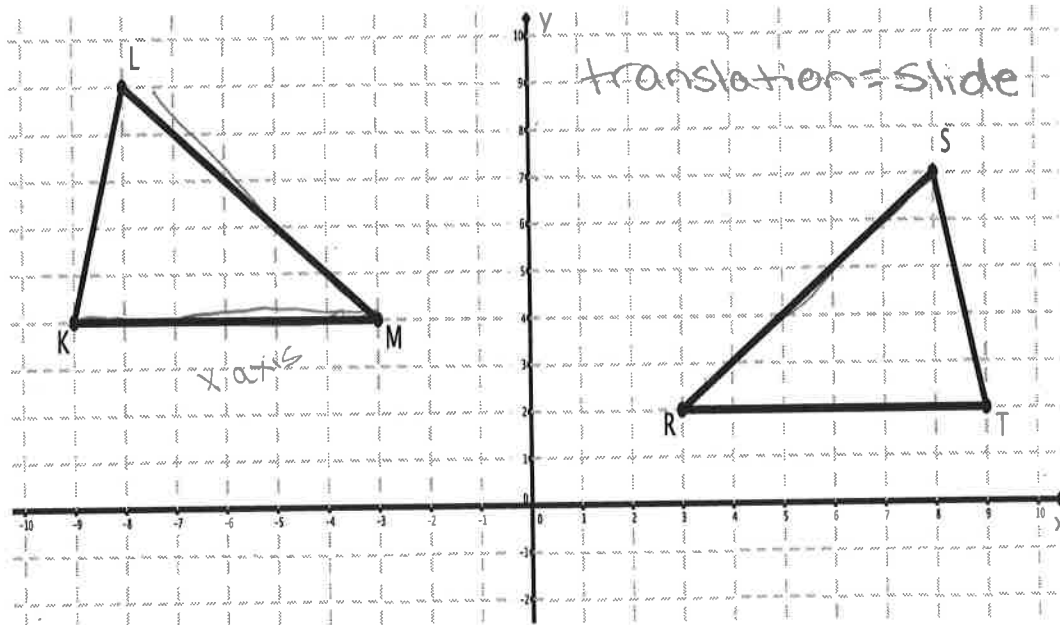
- A) reflection over the x-axis and translation 2 units down
 B) reflection over the y-axis and translation 2 units down *what does it mean over the y-axis*
 C) translation 2 units down and 90° rotation about the origin
 D) translation 12 units right and 90° rotation about the origin *would you start from K or M to move 12 units over?*



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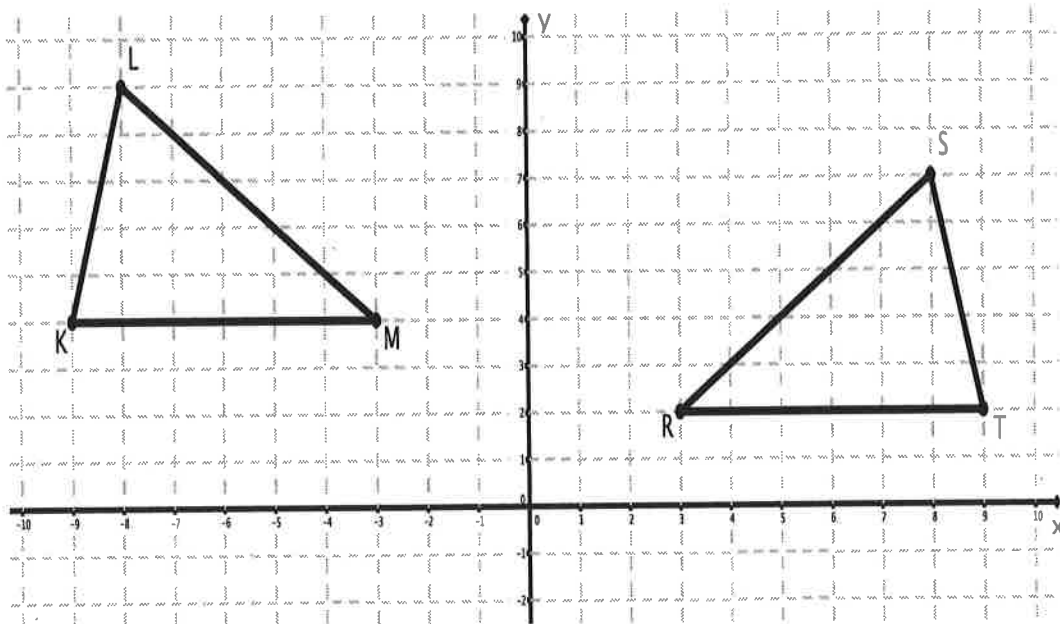


I looked at the x axis and A said the reflection over the x axis and that's what happens with the triangles and translation means the slide starts two units down.

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Which sequence of transformations carries $\triangle KLM$ to $\triangle TSR$?

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I chose this answer because it basically flipped around then it moved down two units.

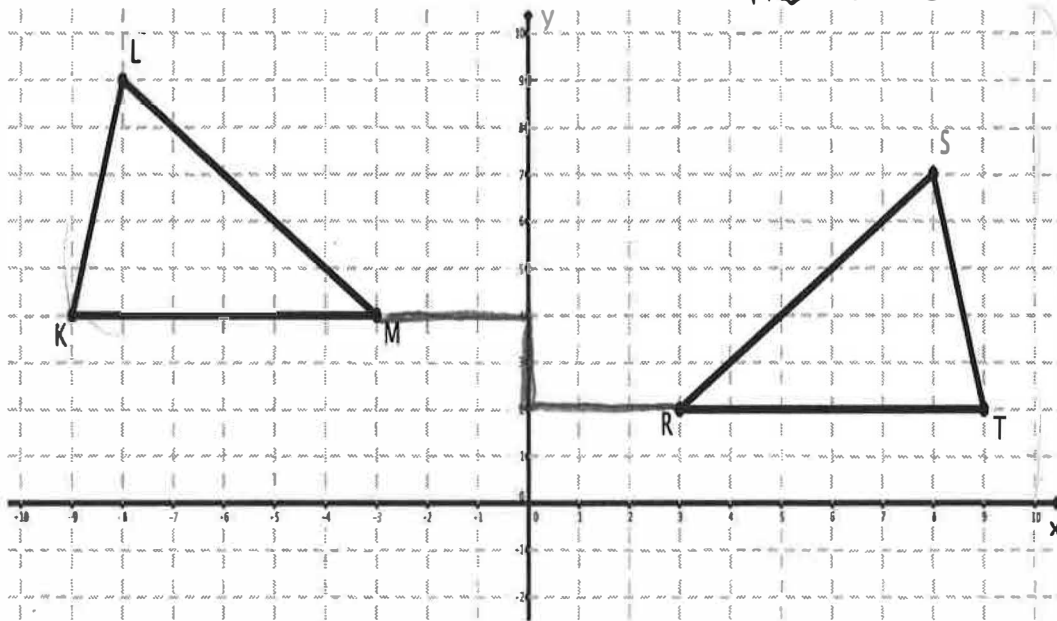
task #1

Which sequence of transformations carries $\triangle KLM$ to $\triangle TSR$?

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I do not know what this means

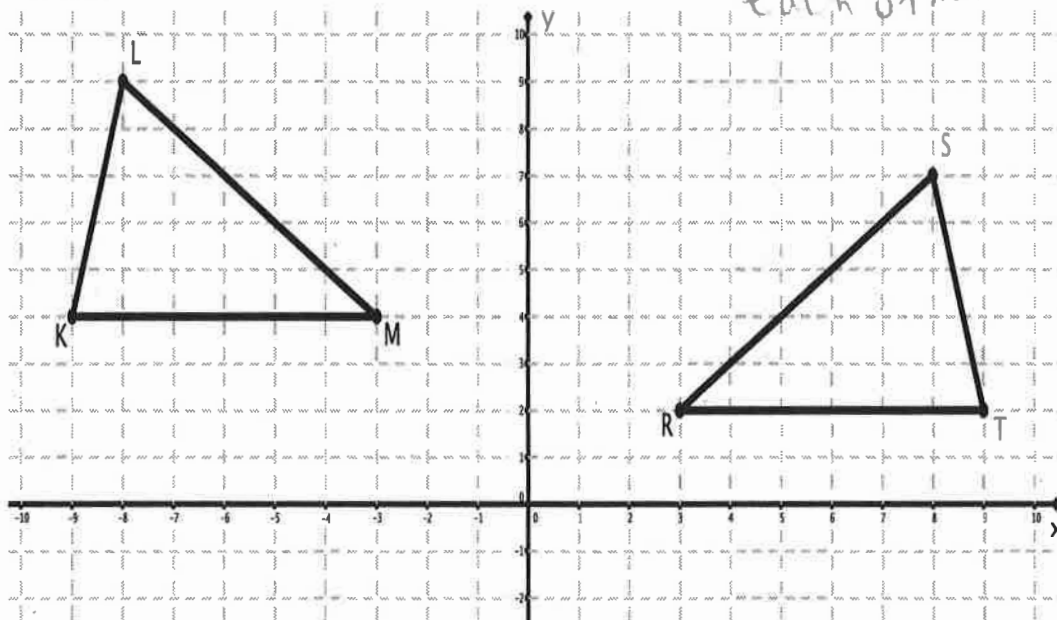
Most of this does not make sense to me.



Task #1

Which sequence of transformations carries $\triangle KLM$ to $\triangle TSR$?

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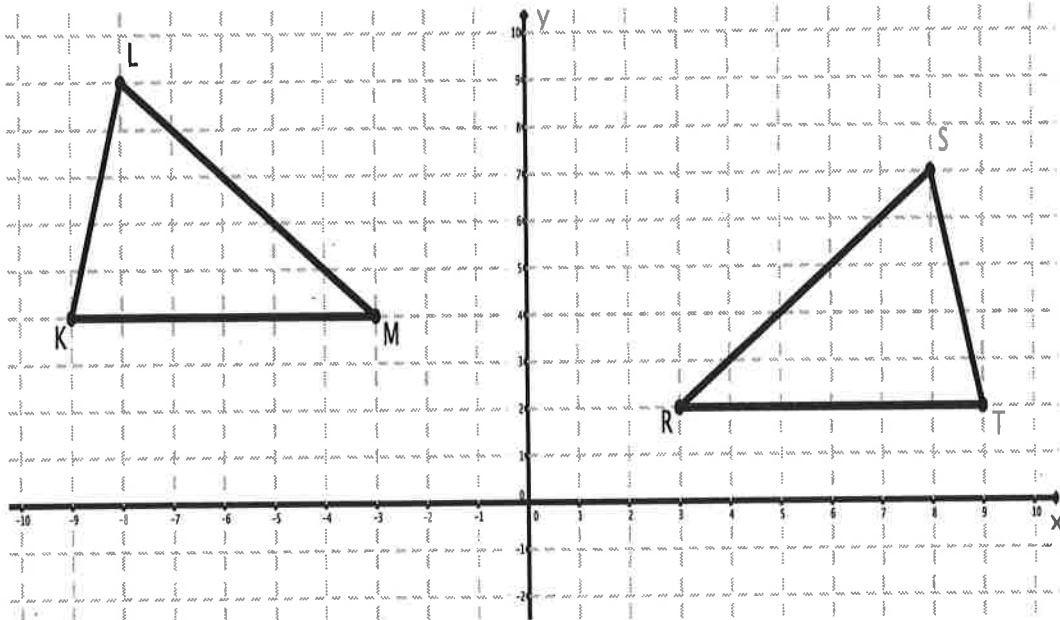
I think that this is the answer because they look the same and they look like a reflection of each other

Confused on this, Math term for translation?
 " $\triangle KLM$ to $\triangle TSR$?" What does this even mean? IM not exactly sure
 does the math term reflection mean the same as real life term for it?

Task #1

Which sequence of transformations carries $\triangle KLM$ to $\triangle TSR$?

- (A) reflection over the x-axis and translation 2 units down
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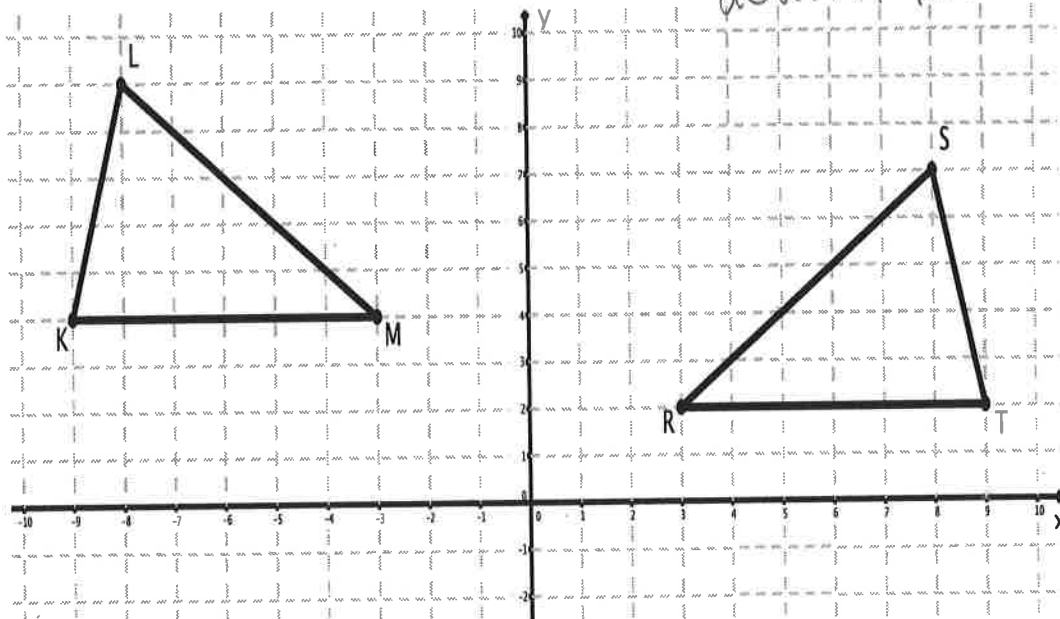
Beacus The $\triangle TSR$ is in The X axis and 2 units down fits it.

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Which sequence of transformations carries $\triangle KLM$ to $\triangle TSR$?

- A) reflection over the x-axis and translation 2 units down
B) reflection over the y-axis and translation 2 units down
C) translation 2 units down and 90° rotation about the origin
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I choose A b/c
if you put $\triangle KLM$ in a
mirror and move 2 units
down it will look like $\triangle TSR$

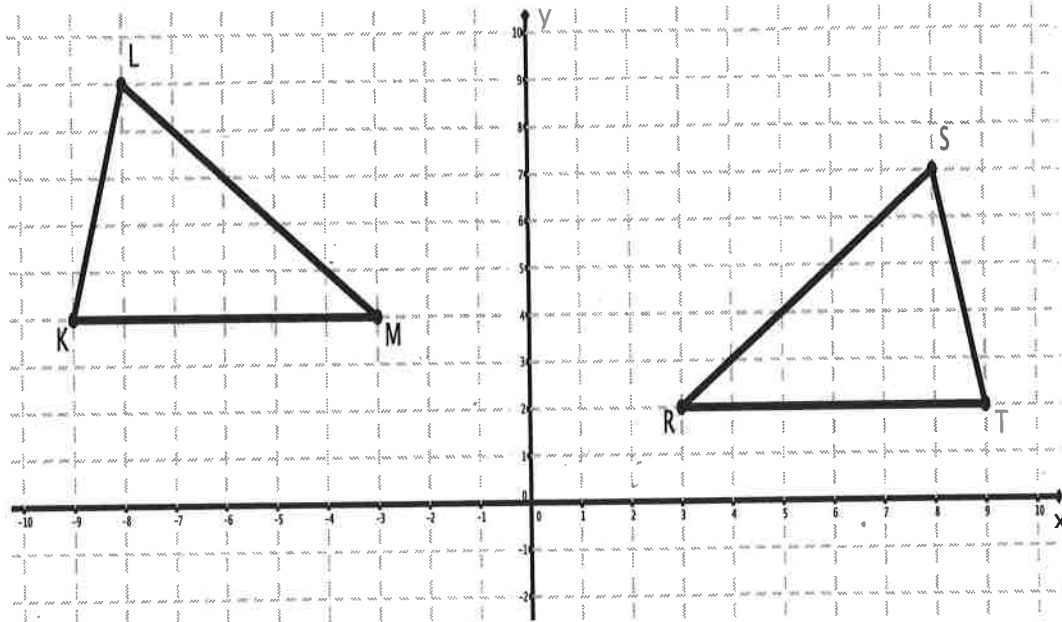


Task #1

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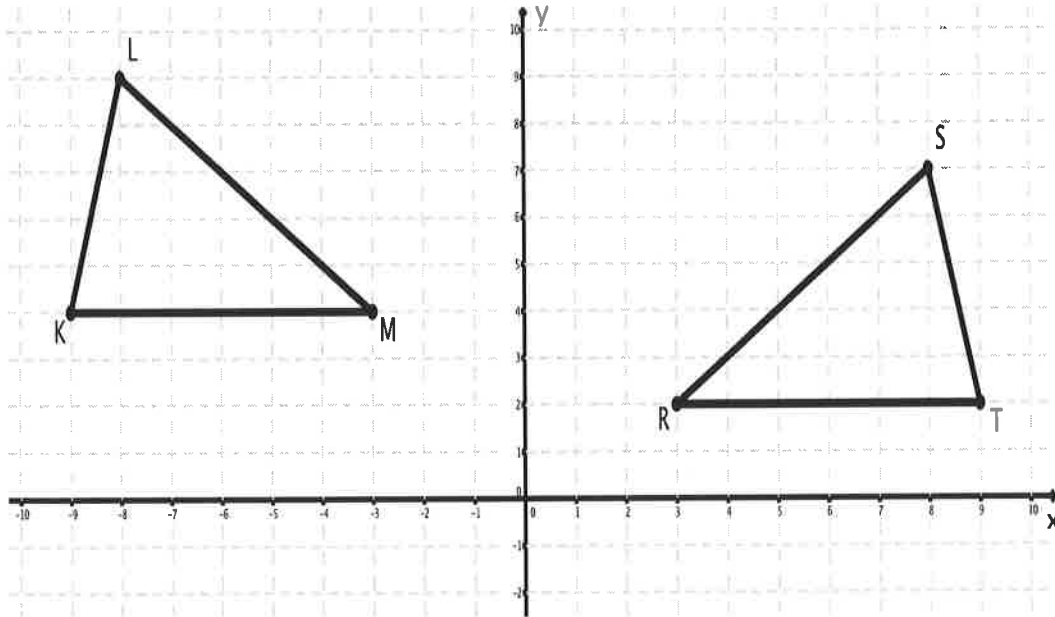
The sequence
is B, T, D, C



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K and T are congruent parts of the triangles. Since K is on $x: -9$ and T is on $x: 9$, this means that if K is reflected, it will be on the same x-axis. Since T is on $y: 2$ and K is on $y: 4$, the triangle must also be translated 2 units down after being reflected.

Task #2

$\triangle ABC$ is rotated 90° clockwise about the origin to form $\triangle DEF$. $\triangle DEF$ is transformed by a dilation centered at the origin, with scale factor 4. The result is $\triangle QRS$. (You may use the space below.)

Part 1: What parts of $\triangle QRS$ are congruent to the corresponding parts of $\triangle ABC$? Explain your reasoning.

The origin of $\triangle QRS$ and $\triangle ABC$ are congruent. I think this because the center of origin did not change only the rotation and side length.

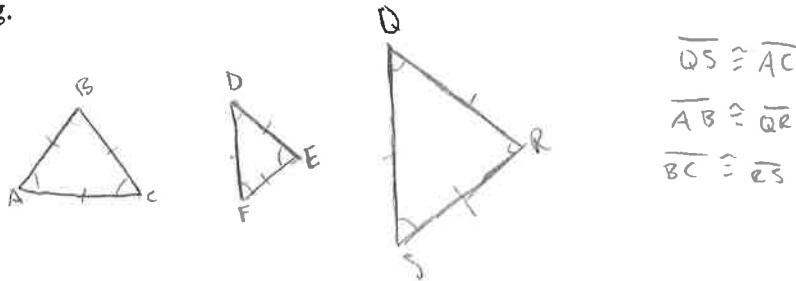
Part 2: What is the relationship between the perimeter of $\triangle QRS$ and $\triangle ABC$? Explain your reasoning.

The relationship between $\triangle QRS$ and $\triangle ABC$ are that $\triangle QRS$'s perimeter is 4 times the size of $\triangle ABC$'s. So given the perimeter of $\triangle QRS$ you can figure out $\triangle ABC$, just divide $\triangle QRS$'s perimeter by 4 and you have $\triangle ABC$'s. This is also true the other way around. Given $\triangle ABC$'s perimeter, you can multiply it by 4 and you have $\triangle QRS$'s perimeter.

Task #2

$\triangle ABC$ is rotated 90° clockwise about the origin to form $\triangle DEF$. $\triangle DEF$ is transformed by a dilation centered at the origin, with scale factor 4. The result is $\triangle QRS$. (You may use the space below.)

Part 1: What parts of $\triangle QRS$ are congruent to the corresponding parts of $\triangle ABC$? Explain your reasoning.



ABC is rotated to form DEF. DEF is dilated to form QRS.

\overline{AB} is the same measure as \overline{QR} . Same with all the sides.

Part 2: What is the relationship between the perimeter of $\triangle QRS$ and $\triangle ABC$? Explain your reasoning.

The perimeters are different because QRS is bigger by a scale factor of 4.

Task #2

$\triangle ABC$ is rotated 90° clockwise about the origin to form $\triangle DEF$. $\triangle DEF$ is transformed by a dilation centered at the origin, with scale factor 4. The result is $\triangle QRS$. (You may use the space below.)

Part 1: What parts of $\triangle QRS$ are congruent to the corresponding parts of $\triangle ABC$? Explain your reasoning.

$$A \cong Q \quad R \cong B \quad S \cong C$$

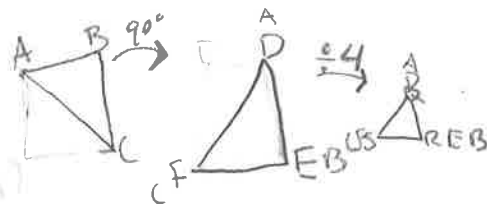
I started off with \triangle (a triangle)

Then it went to \triangle with a 90° rotation

Then it went to \triangle with a scale factor of 4.

The letters stay the same as you turn the triangle.

The order of $\triangle QRS$ lines up with the order $\triangle ABC$.



Part 2: What is the relationship between the perimeter of $\triangle QRS$ and $\triangle ABC$? Explain your reasoning.

$\triangle QRS$ would be smaller because it has a scale factor of 4. $\triangle ABC$ would have a larger Perimeter Perimeter by 4.

Task #2

$\triangle ABC$ is rotated 90° clockwise about the origin to form $\triangle DEF$. $\triangle DEF$ is transformed by a dilation centered at the origin, with scale factor 4. The result is $\triangle QRS$. (You may use the space below.)

Part 1: What parts of $\triangle QRS$ are congruent to the corresponding parts of $\triangle ABC$? Explain your reasoning.

The triangles are similar but the size of them are just different.

Part 2: What is the relationship between the perimeter of $\triangle QRS$ and $\triangle ABC$? Explain your reasoning.

It has just increased by 4 because that's the scale factor that changed.

Task #2

$\triangle ABC$ is rotated 90° clockwise about the [?]origin to form $\triangle DEF$. $\triangle DEF$ is transformed by a dilation centered at the origin, with scale factor 4. The result is $\triangle QRS$. (You may use the space below.)

Part 1: What parts of $\triangle QRS$ are congruent to the corresponding parts of $\triangle ABC$? Explain your reasoning.

Maybe, no sides are congruent because we rotated it 90° ; but one side might be congruent depending on what origin means, but I'm sticking with no sides.

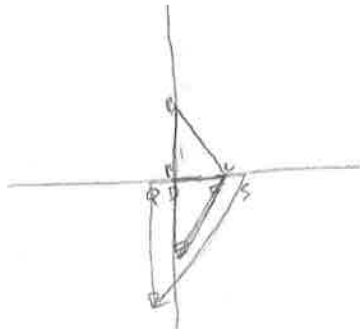
Part 2: What is the relationship between the perimeter of $\triangle QRS$ and $\triangle ABC$? Explain your reasoning.

the perimeter of $\triangle QRS$ is 4x larger than the perimeter of $\triangle ABC$, the factor scale was 4

Task #2

$\triangle ABC$ is rotated 90° clockwise about the origin to form $\triangle DEF$. $\triangle DEF$ is transformed by a dilation centered at the origin, with scale factor 4. The result is $\triangle QRS$. (You may use the space below.)

Part 1: What parts of $\triangle QRS$ are congruent to the corresponding parts of $\triangle ABC$? Explain your reasoning.



side AC is congruent with side QS

Part 2: What is the relationship between the perimeter of $\triangle QRS$ and $\triangle ABC$? Explain your reasoning.

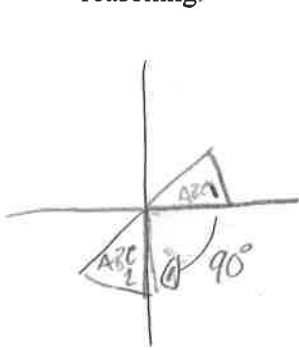
side QS is $AC + 4$ and side QR is $AB + 4$



Task #2

$\triangle ABC$ is rotated 90° clockwise about the origin to form $\triangle DEF$. $\triangle DEF$ is transformed by a dilation centered at the origin, with scale factor 4. The result is $\triangle QRS$. (You may use the space below.)

Part 1: What parts of $\triangle QRS$ are congruent to the corresponding parts of $\triangle ABC$? Explain your reasoning.



$$\begin{aligned} A &= B \\ D &= E \\ Q &= R \\ C &= F = S \end{aligned}$$

Q + S are congruent because they have corresponding sides to A and C in $\triangle ABC$.

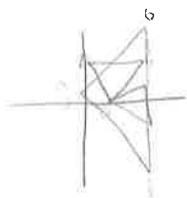
Part 2: What is the relationship between the perimeter of $\triangle QRS$ and $\triangle ABC$? Explain your reasoning.

The relationship between perimeter of $\triangle QRS$ and $\triangle ABC$ is that they share similar sides.

Task #2

$\triangle ABC$ is rotated 90° clockwise about the origin to form $\triangle DEF$. $\triangle DEF$ is transformed by a dilation centered at the origin, with scale factor 4. The result is $\triangle QRS$. (You may use the space below.)

Part 1: What parts of $\triangle QRS$ are congruent to the corresponding parts of $\triangle ABC$? Explain your reasoning.



Line \overleftrightarrow{SQ} touches points A and B because that is where the triangle is after the transformation.

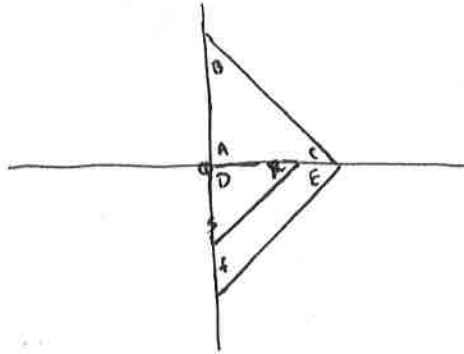
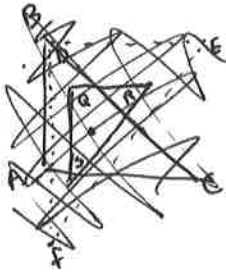
Part 2: What is the relationship between the perimeter of $\triangle QRS$ and $\triangle ABC$? Explain your reasoning.

The perimeter of $\triangle ABC$ has $\frac{1}{4}$ of the length as $\triangle QRS$ because it was magnified by a scale factor of 4.

Task #2

$\triangle ABC$ is rotated 90° clockwise about the origin to form $\triangle DEF$. $\triangle DEF$ is transformed by a dilation centered at the origin, with scale factor 4. The result is $\triangle QRS$. (You may use the space below.)

Part 1: What parts of $\triangle QRS$ are congruent to the corresponding parts of $\triangle ABC$? Explain your reasoning.



$\angle Q$ is congruent to $\angle A$

$\angle R$ is congruent to $\angle B$

$\angle S$ is congruent to $\angle C$

because the length
of sides changes
but the angle
measurements do not.

Part 2: What is the relationship between the perimeter of $\triangle QRS$ and $\triangle ABC$? Explain your reasoning.

$\triangle QRS$ is a scale factor of 4
less than $\triangle ABC$

Task #2

$\triangle ABC$ is rotated 90° clockwise about the origin to form $\triangle DEF$. $\triangle DEF$ is transformed by a dilation centered at the origin, with scale factor 4. The result is $\triangle QRS$. (You may use the space below.)

Part 1: What parts of $\triangle QRS$ are congruent to the corresponding parts of $\triangle ABC$? Explain your reasoning.

The angle measures of $\triangle QRS$ are congruent to $\triangle ABC$ because no matter how much a triangle shrinks or increases, and moves around on a graph, the angle measures stay the same.

Part 2: What is the relationship between the perimeter of $\triangle QRS$ and $\triangle ABC$? Explain your reasoning.

The relationship is just that the perimeter measures of $\triangle QRS$ have been scaled up by 4, so the perimeters are different, but still related by factors.