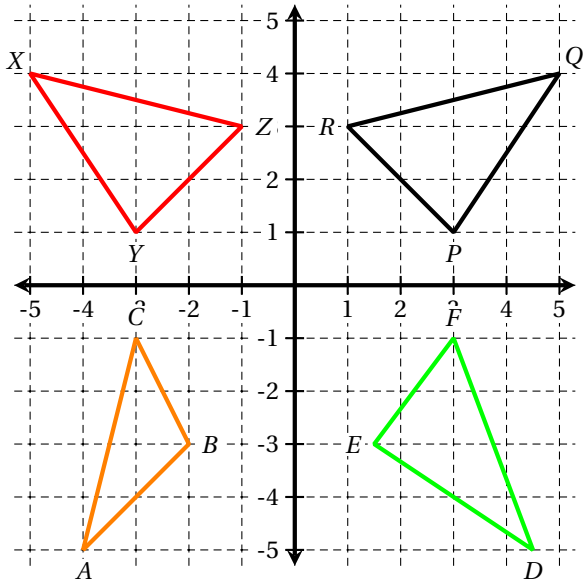
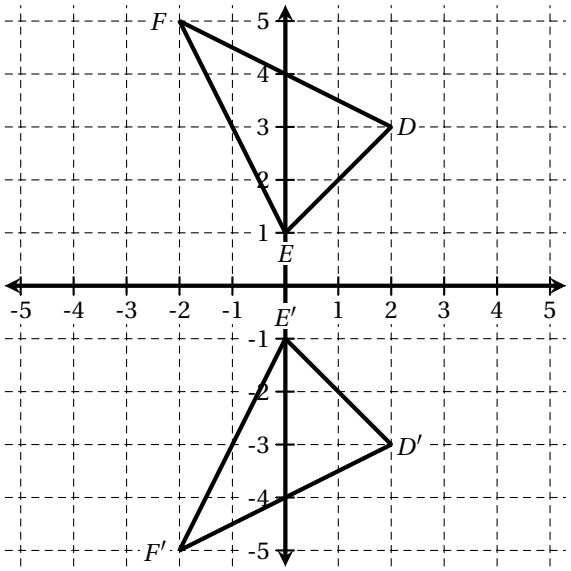
Unit 3 Revision Name: _____ Class:_____ January 26, 2024

1. Which two figures below can be mapped using rigid motion?



○ $\triangle XYZ$ and $\triangle DEF$
○ $\triangle ABC$ and $\triangle DEF$
○ $\triangle XYZ$ and $\triangle QPR$
○ $\triangle QPR$ and $\triangle DFE$

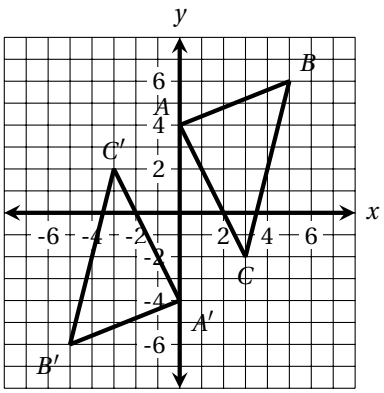
2. For the rigid motion shown in the coordinate plane, which figure is the image?



○ $\triangle DEF$ ○ $\triangle D'E'F'$

3. Which preimage maps to the image through a reflection transformation? Reminder: Reflection changes both the orientation of the figure and the orientation of the vertices.

○



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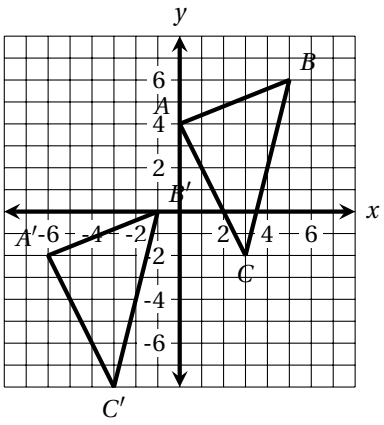

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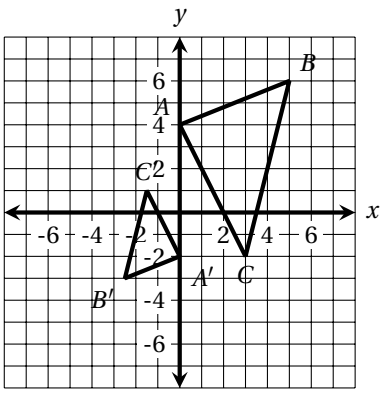

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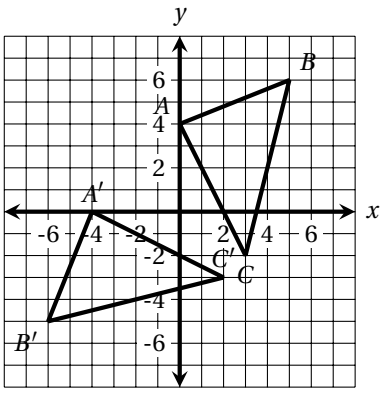


4. The $\triangle WXY$ with vertices $W(-1,-8)$, $X(-3,2)$, and $Y(4,1)$ undergoes a transformation resulting in $\triangle W'X'Y'$ with vertices $W'(8,1)$, $X'(-2,3)$, and $Y'(-1,-4)$. Which transformation maps $\triangle WXY$ onto $\triangle W'X'Y'$?

◯ $R_{(x-axis)}$ ◯ $R_{(y-axis)}$ ◯ $R_{(y=x)}$ ◯ $R_{(y=-x)}$

5. The vertices of $\triangle PQR$ are $P(6,9)$, $Q(0,-2)$, and $R(-2,4)$. If $R_{(x-axis)}(\triangle PQR) = \triangle P'Q'R$, what are the coordinates of the vertices of $\triangle P'Q'R'$?

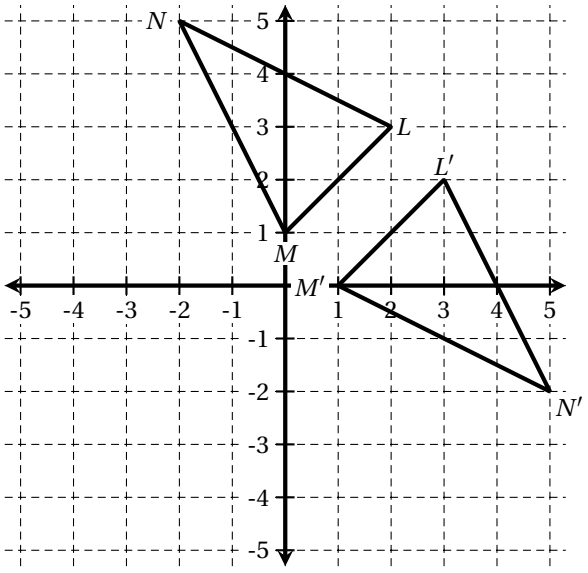
◯ $P'(6,-9)$, $Q'(0,2)$, $R'(-2,-4)$
◯ $P'(-6,9)$, $Q'(0,-2)$, $R'(2,4)$
◯ $P'(9,6)$, $Q'(-2,0)$, $R'(4,-2)$
◯ $P'(-9,-6)$, $Q'(2,0)$, $R'(-4,2)$

6. What is the reflection rule that maps triangle and its image?

$D(-2,5)$, $E(6,5)$, and $F(2,-1)$.
$D'(-2,5)$, $E'(-10,5)$, and $F'(-6,-1)$

◯ $R_{y=x}$ ◯ $R_{x=2}$ ◯ $R_{x=-2}$ ◯ $R_{y=-x}$

7. Which transformation maps $\triangle LMN$ onto $\triangle L'M'N'$



◯ $R_{y=x}$ ◯ $R_{y=-x}$ ◯ $r_{(-90°,O)}$ ◯ $r_{(90°,O)}$

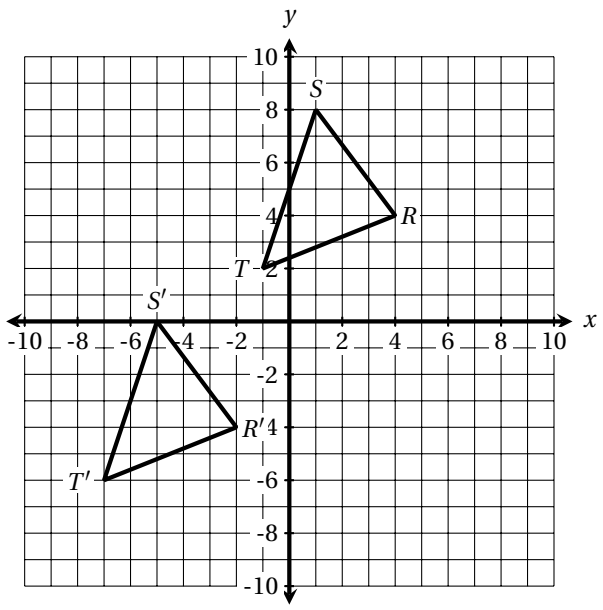
8. Suppose $\triangle XYZ$ is the result of a translation of $\triangle UVW$. If $\triangle UVW$ has vertices $U(-8,-9)$, $V(-3,-10)$, and $W(-5,-6)$ and Y is at $(-3,-2)$, what translation rule maps $\triangle UVW$ to $\triangle XYZ$?

◯ $T_{(0,8)}(\triangle UVW) = \triangle XYZ$
◯ $T_{(0,-8)}(\triangle UVW) = \triangle XYZ$
◯ $T_{(8,0)}(\triangle UVW) = \triangle XYZ$
◯ $T_{(-8,0)}(\triangle UVW) = \triangle XYZ$

9. Give $T_{(5,3)}(\triangle ABC) = \triangle A'B'C'$ and the vertices of $\triangle A'B'C'$ are $A'(6,-1)$, $B'(3,4)$, and $C'(-1,-2)$, what are the coordinates for the vertices of $\triangle ABC$?

◯ $A(1,-4)$, $B(-2,1)$, and $C(-6,-5)$
◯ $A(11,2)$, $B(8,6)$, and $C(4,1)$
◯ $A(-1,4)$, $B(2,-1)$, and $C(6,5)$
◯ $A(-11,-2)$, $B(-8,-6)$, and $C(-4,-1)$

10. Which transformation maps the preimage to the image shown in the coordinate plane?



◯ $T_{(-3,-4)}$ ◯ $T_{(3,4)}$ ◯ $T_{(6,8)}$ ◯ $T_{(-6,-8)}$

11. Given the composition transformation $\left(R_{(y=-x)} \circ T_{(-3,-2)}\right)(\triangle ABC) = A''B''C''$, which of the following represents the first transformation in the composition transformation?

◯ $T_{(-3,-2)}\left(\triangle A'B'C'\right) = \triangle A''B''C''$
◯ $T_{(-3,-2)}(\triangle ABC) = \triangle A'B'C'$
◯ $R_{(y=-x)}(\triangle ABC) = \triangle A'B'C'$
◯ $R_{(y=-x)}\left(\triangle A'B'C'\right) = \triangle A''B''C''$

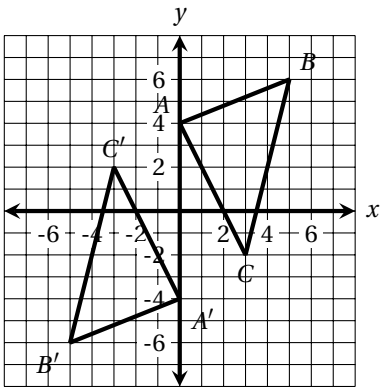
12. Given $\left(R_{(x-axis)} \circ T_{(2,4)}\right)(\triangle DEF) = \triangle D''E''F''$, what are the coordinates for the vertices of $\triangle D'E'F'$ when the vertices of $\triangle DEF$ are $D(2,5)$, $E(-3,-1)$, and $F(-4,4)$?

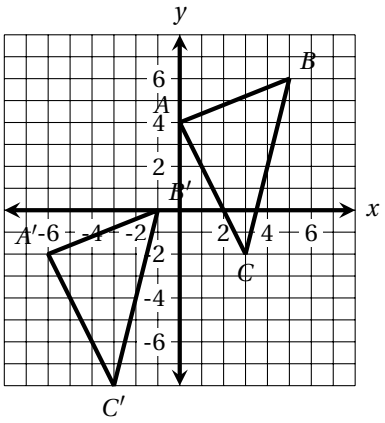
◯ $D'(4,9)$, $E'(-1,3)$, and $F'(-2,8)$
◯ $D'(0,1)$, $E'(-5,-5)$, and $F'(-6,0)$
◯ $D'(-4,-9)$, $E'(1,-3)$, and $F'(2,-8)$
◯ $D'(0,-1)$, $E'(5,5)$, and $F'(6,0)$

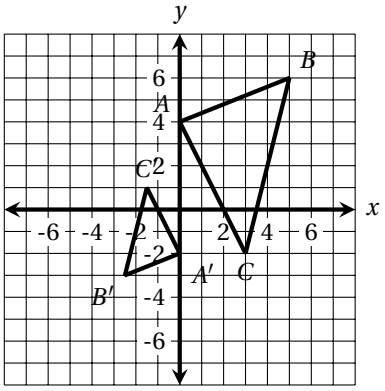
13. A regular pentagon is rotated 360° about its center. How many times does the image of the pentagon coincide with the preimage during the rotation?

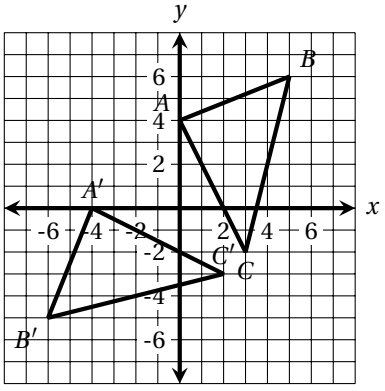
◯ 5 times ◯ 6 times ◯ 7 times ◯ 8 times

14. Which preimage maps to the image through a rotation transformation? Reminder: A rotation changes the orientation of the figure and but not the orientation of the vertices.

○ 

○ 

○ 

○ 

15. Consider $\triangle ABC$ with vertices $A(2,4)$, $B(6,2)$, and $C(8,6)$ on the coordinate plane.

First, perform a translation of the triangle by $(-3,1)$ to obtain $\triangle A'B'C'$. Next, reflect $\triangle A'B'C'$ across the y-axis to get $\triangle A''B''C''$.

What are the coordinates of point A'' after these transformations?

○ $(-1,3)$ ○ $(1,3)$ ○ $(-1,5)$ ○ $(1,5)$

16. Consider a quadrilateral $ABCD$ on the coordinate plane, where $A(2,3)$, $B(5,3)$, $C(5,6)$, and $D(2,6)$.

Perform a reflection of the quadrilateral across the line $y = 4$ to get quadrilateral $A'B'C'D'$. Next, reflection quadrilateral $A'B'C'D'$ across the line $y = 1$ to obtain quadrilateral $A''B''C''D''$.

What is the equivalent translation that takes the quadrilateral $ABCD$ to quadrilateral $A''B''C''D''$?

○ $T_{(0,-6)}$ ○ $T_{(0,6)}$ ○ $T_{(0,-4)}$ ○ $T_{(0,4)}$

17. Consider triangle ABC on the coordinate plane, where $A(3,2)$, $B(6,5)$, and $C(1,5)$.

Perform a reflection of the triangle across the line $y = x$ to get $A'B'C'$. Next, reflect $A'B'C'$ across the y-axis to obtain $A''B''C''$.

What is the equivalent rotation angle that takes triangle ABC to triangle $A""B""C""$?

○ $90°$ ○ $180°$ ○ $270°$ ○ $360°$

18. Consider the point $P(4,-2)$ on the coordinate plane. Perform a counterclockwise rotation of $90°$ about the origin.

What are the coordinates of the resulting point, P'?

○ $(2,4)$ ○ $(-4,2)$ ○ $(2,-4)$ ○ $(-2,-4)$

19. Consider the point P with coordinates $(3,7)$. Perform $T_{(2,-4)}$ followed by another translation, $T_{(-1,3)}$ to obtain the final position, P''.

What is the equivalent single translation that takes point P to the final position, P''?

○ $T_{(4,6)}$ ○ $T_{(1,-1)}$ ○ $T_{(1,7)}$ ○ $T_{(2,-1)}$

20. Draw the lines of symmetry for the following figures.

C 8