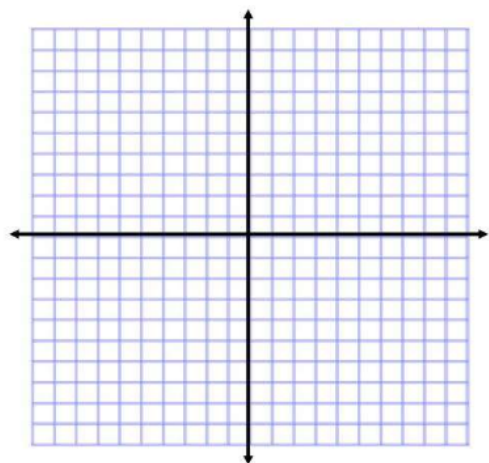


Bell Ringer

Section 9.4 – Composition of Isometries

1. $\triangle XYZ$ has vertices $X(-4, 0)$, $Y(-6, 6)$ and $Z(-1, 5)$. What are the coordinates of the vertices of $(R_{x=3} \circ T_{\langle 3,4 \rangle})(\triangle XYZ)$

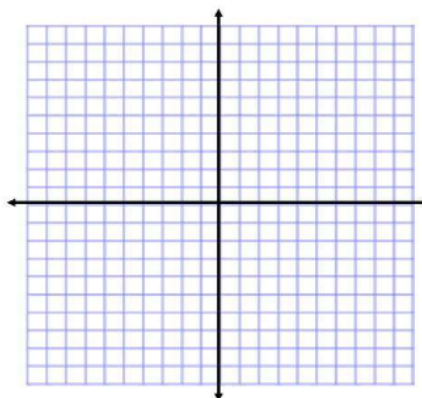
$X''(\quad , \quad), Y''(\quad , \quad), Z''(\quad , \quad)$



2. Write a single transformation rule that has the same effect on the point shown as each composition of transformations.

a. $T_{\langle -3,5 \rangle} \circ T_{\langle -1,2 \rangle}$

b. $R_{y=-2} \circ R_{y=5}$



3. Write an exponential equation with a y-intercept of 3 and a common ratio of $\frac{1}{2}$

4. Write a linear equation with a y-intercept of 3 and a slope of $\frac{1}{2}$

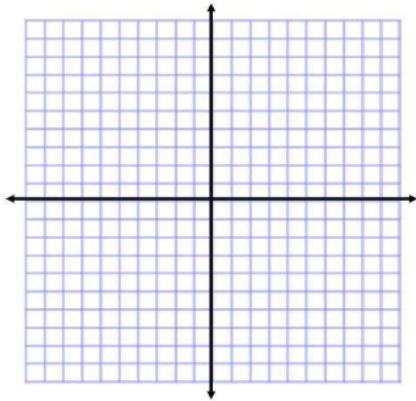
5. Write an exponential equation of a geometric sequence with an initial value of 3 and a common ratio of $\frac{1}{2}$

Solutions

Section 9.4 – Composition of Isometries

1. $\triangle XYZ$ has vertices $X(-4, 0)$, $Y(-6, 6)$ and $Z(-1, 5)$. What are the coordinates of the vertices of $(R_{x=3} \circ T_{\langle 3,4 \rangle})(\triangle XYZ)$

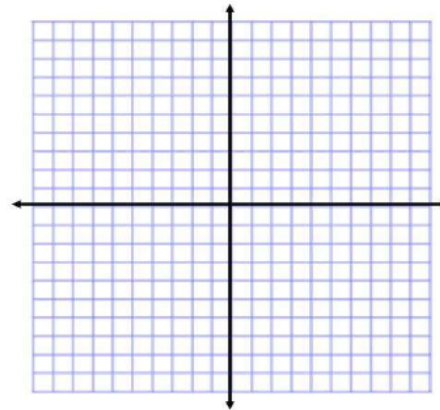
$$X''(7, 4), \quad Y''(9, 10), \quad Z''(4, 9)$$



2. Write a single transformation rule that has the same effect on the point shown as each composition of transformations.

a. $T_{\langle -3,5 \rangle} \circ T_{\langle -1,2 \rangle}$
 $T_{\langle -4,7 \rangle}$
 (left 4 and up 7)

b. $R_{y=-2} \circ R_{y=5}$
 $T_{\langle 0,-14 \rangle}$
 Translates down 14



3. Write an exponential equation with a y-intercept of 3 and a common ratio of $\frac{1}{2}$

$$y = 3\left(\frac{1}{2}\right)^x$$

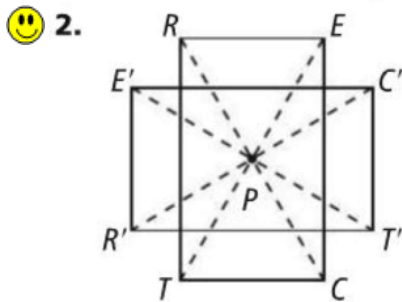
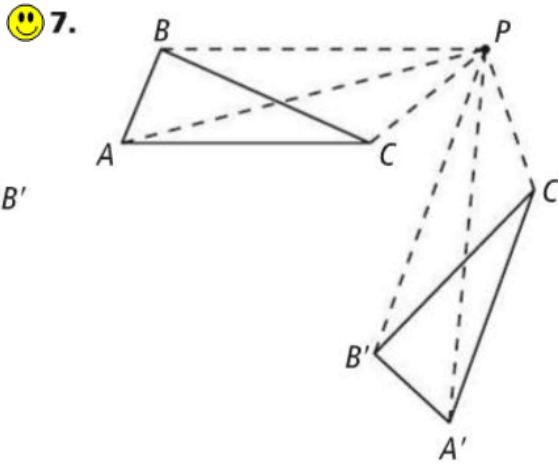
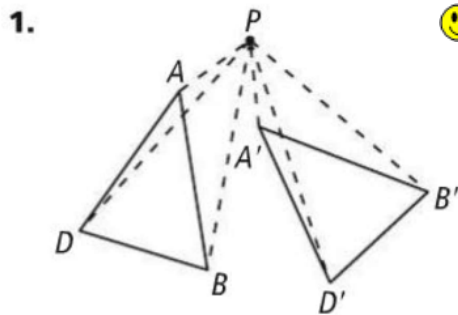
4. Write a linear equation with a y-intercept of 3 and a slope of $\frac{1}{2}$

$$y = \frac{1}{2}x + 3$$

5. Write an exponential equation of a geometric sequence with an initial value of 3 and a common ratio of $\frac{1}{2}$

$$A(n) = 3\left(\frac{1}{2}\right)^{n-1}$$

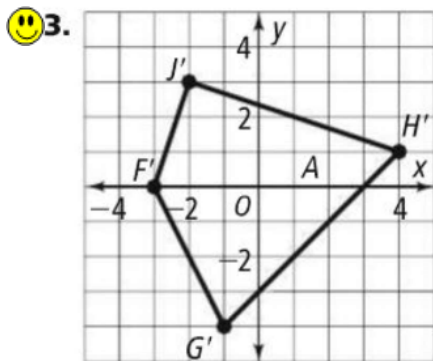
correct 9.3 #s 1-4, 7-9, 11-14, 20, 27-32



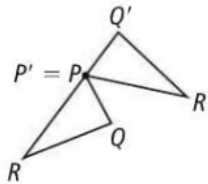
8. R

9. \overline{SE}

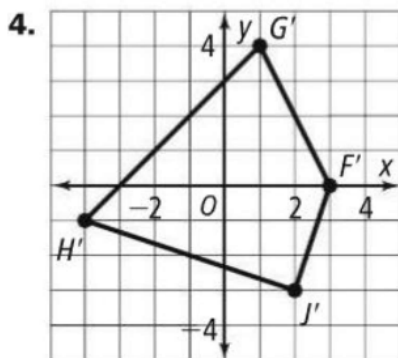
11. Draw \overline{AO} and $\overline{A'O}$ and then measure $\angle AOA'$.



12. The diagram shows a reflection, not a rotation. R' is a 115° clockwise rotation of R . All points of $\triangle PQR$ must be rotated counterclockwise.



13. Both are rigid motions. A reflection reverses orientation. A rotation has the same orientation.



14. $(-x, -y)$; Sample: The coordinates are the same as a single rotation of 180° since $135^\circ + 45^\circ = 180^\circ$.

20. 168.75°

27. H

28. M

29. \overline{BC}

30. C

31. \overline{LM}

32. A

due tomorrow
9.4 #s 1-8, 10-16 evens, 19-20, 26-32 evens

Hw Tracker due Wednesday

Review...

Perform the following Transformation
 $T_{\langle -4, 2 \rangle}(ABC)$

