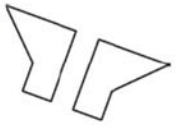
Chapter 9 Review Worksheet B

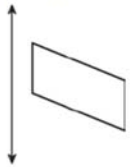
LESSON 9-1 **Reteach**
Reflections

Tell whether each transformation appears to be a reflection.

1. 

2. 

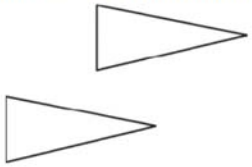
Copy each figure and the line of reflection. Draw the reflection of the figure across the line.

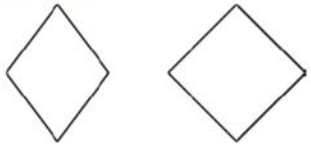
3. 

4. 

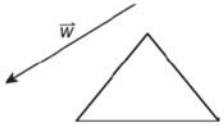
LESSON 9-2 **Reteach**
Translations

Tell whether each transformation appears to be a translation.

1. 

2. 

Copy each figure and the translation vector. Draw the translation of the figure along the given vector.

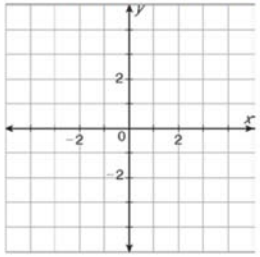
3. 

4. 

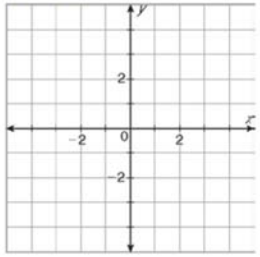
LESSON 9-1 **Reteach**
Reflections

Reflect the figure with the given vertices across the line.

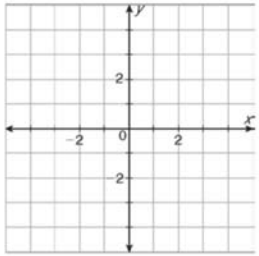
5. $M(2, 4)$, $N(4, 2)$, $P(3, -2)$; y-axis



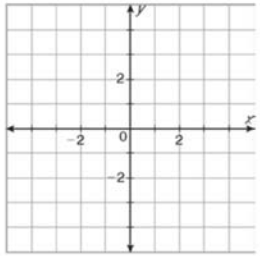
6. $T(-4, 1)$, $U(-3, 4)$, $V(2, 3)$, $W(0, 1)$; x-axis



7. $Q(-3, -1)$, $R(2, 4)$, $S(2, 1)$; x-axis



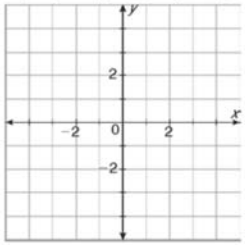
8. $A(-2, 4)$, $B(1, 1)$, $C(-5, -1)$; $y = x$



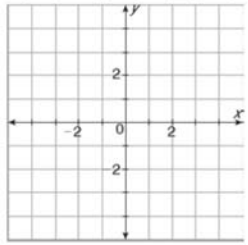
LESSON 9-2 **Reteach**
Translations

Translate the figure with the given vertices along the given vector.

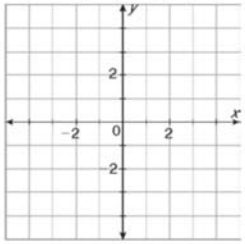
5. $E(-2, -4)$, $F(3, 0)$, $G(3, -4)$; $\langle 0, 3 \rangle$



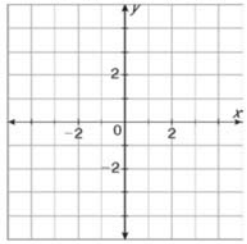
6. $P(-4, -1)$, $Q(-1, 3)$, $R(0, -4)$; $\langle 4, 1 \rangle$



7. $A(1, -2)$, $B(1, 0)$, $C(3, 1)$, $D(4, -3)$; $\langle -5, 3 \rangle$



8. $G(-3, 4)$, $H(4, 3)$, $J(1, 2)$; $\langle -1, -6 \rangle$



LESSON 9-2

Practice A

Translations

10. Leigh and Derek are tossing a flying disc. Leigh stands at (2, 5) and throws the disc to Derek at (11, 0). Find the translation vector from Leigh to Derek.

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LESSON 9-2

Practice B

Translations

11. A builder is trying to level out some ground with a front-end loader. He picks up some excess dirt at (9, 16) and then maneuvers through the job site along the vectors ⟨–6, 0⟩, ⟨2, 5⟩, and ⟨8, 10⟩ to get to the spot to unload the dirt. Find the coordinates of the unloading point. Find a single vector from the loading point to the unloading point.

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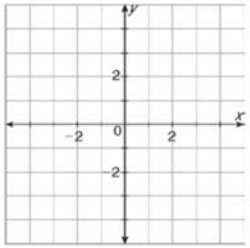
LESSON 9-3

Reteach

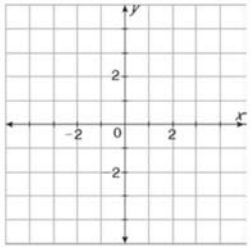
Rotations

Rotate the figure with the given vertices about the origin using the given angle.

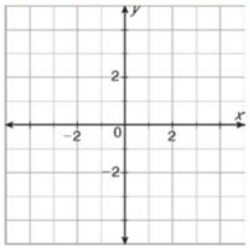
5. $R(0, 0)$, $S(3, 1)$, $T(2, 4)$; 90°



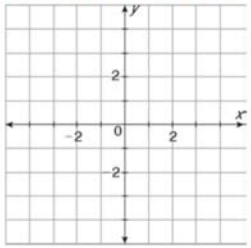
6. $A(0, 0)$, $B(–4, 2)$, $C(–1, 4)$; 180°



7. $E(0, 3)$, $F(3, 5)$, $G(4, 0)$; 180°



8. $U(1, –1)$, $V(4, –2)$, $W(3, –4)$; 90°



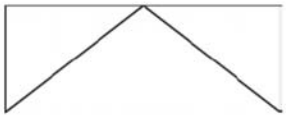
LESSON 9-3

Reteach

Rotations

Tell whether each transformation appears to be a rotation.

1.



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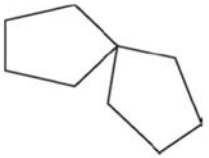
2.



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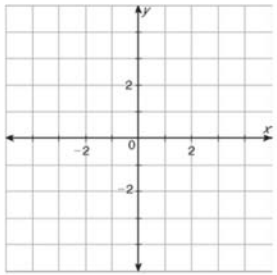
LESSON 9-4

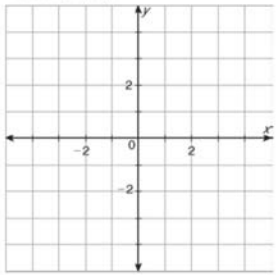
Reteach

Compositions of Transformations

3. $\triangle ABC$ has vertices $A(0, –1)$, $B(3, 4)$, and $C(3, 1)$. Rotate $\triangle ABC$ 180° about the origin and then reflect it across the x-axis.



4. $\triangle QRS$ has vertices $Q(2, 1)$, $R(4, –2)$, and $S(1, –3)$. Reflect $\triangle QRS$ across the y-axis and then translate it along the vector ⟨1, 3⟩.

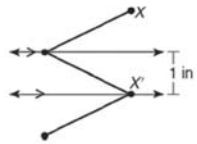


LESSON 9-4

Practice A

Compositions of Transformations

7. To make part of a zigzag pattern, Aubree draws a line segment and then reflects it twice across lines through endpoints of the segments. The lines are parallel and 1 inch apart. Find the distance from X to X''.



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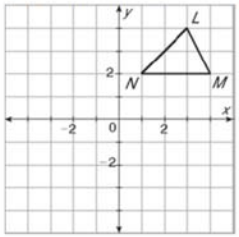
LESSON 9-4

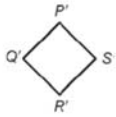
Practice A

Compositions of Transformations

6. $\triangle LMN$ has vertices $L(3, 4)$, $M(4, 2)$, and $N(1, 2)$. Rotate $\triangle LMN$ 180° about the origin and then translate it along the vector $\langle 0, 4 \rangle$.



Complete Exercises 8–10 to draw two lines of reflection that produce a transformation equivalent to a translation.



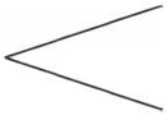
8. Draw dashed segment $\overline{PP'}$. Locate the midpoint of this segment and label it T.
9. Locate the midpoints of $\overline{PT}$ and $\overline{P'T}$. Label them U and V.
10. Draw lines through U and V perpendicular to $\overline{PP'}$.

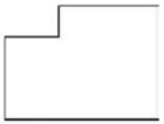
LESSON 9-5

Reteach

Symmetry

Tell whether each figure has line symmetry. If so, draw all lines of symmetry.

1. 

2. 

Tell whether each figure has rotational symmetry. If so, give the angle of rotational symmetry and the order of the symmetry.

3. 

4. 

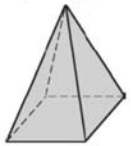
LESSON 9-5

Reteach

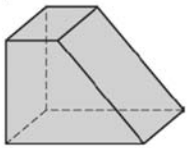
Symmetry

Tell whether each figure has plane symmetry, symmetry about an axis, both, or neither.

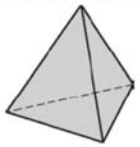
5. square pyramid



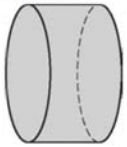
6. prism



7. triangular pyramid



8. cylinder



LESSON 9-5

Practice A

Symmetry

Tell whether each figure has line symmetry. If so, draw all lines of symmetry.

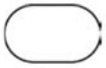
6. 

7. 

8. 

Tell whether each figure has rotational symmetry. If so, give the angle of rotational symmetry and the order of the symmetry.

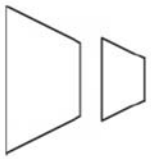
9. 

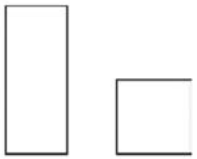
10. 

11. 

LESSON 9-7 **Reteach**
Dilations

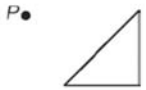
Tell whether each transformation appears to be a dilation.

1. 

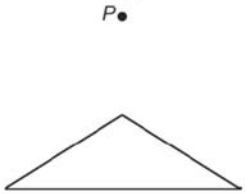
2. 

Copy teach triangle and center of dilation. Draw the image of the triangle under a dilation with the given scale factor.

3. scale factor: 2



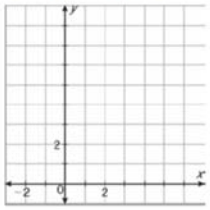
4. scale factor: $\frac{1}{2}$



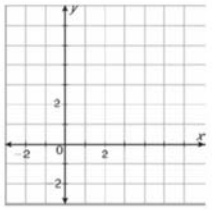
LESSON 9-7 **Reteach**
Dilations

Draw the image of the figure with the given vertices under a dilation with the given scale factor and centered at the origin.

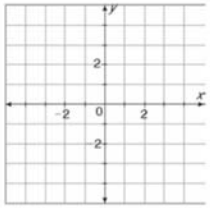
5. $J(0, 0)$, $K(-1, 2)$, $L(3, 4)$; scale factor: 2



6. $A(0, 0)$, $B(0, 6)$, $C(6, 3)$; scale factor: $\frac{1}{3}$



7. $R(1, 0)$, $S(1, -2)$, $T(-1, -2)$; scale factor: -2



8. $G(2, 0)$, $H(0, 4)$, $I(4, 2)$; scale factor: $-\frac{1}{2}$