

# Transformations and Rigid Motions

Translations, reflections, rotations, dilations, and rigid-motion ideas.

Name \_\_\_\_\_ Date \_\_\_\_\_

32 main 2-up grid 12 pages visible side quests

## Completion Reward



Shown here as a small pack artifact, not a preview destination.

1. A segment of length 7 is rotated. What is its image length?

- A. 14
- B. 7
- C. 3.5
- D. It depends on the angle.

1.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

2. If an angle measures 58 degrees before a rigid motion, what is its image measure?

- A. 116 degrees
- B. 29 degrees
- C. 58 degrees
- D. It depends on the motion.

2.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

3. Which transformation is a rigid motion?

- A. Dilation by factor 2
- B. Translation
- C. Stretch in only one direction
- D. Resize by 50%

3.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

1.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

1.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

2.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

2.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

3.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

3.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

1.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

1.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

2.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

2.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

3.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

3.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

**4. What is always true after a sequence of rigid motions?**

- A. The image must get larger.
- B. The image is congruent to the original.
- C. The orientation must stay the same.
- D. The coordinates must all stay positive.

**4.3. A rotation turns a figure around:**

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

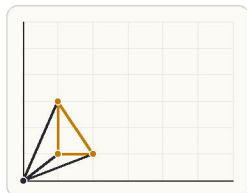
**5. Which statement about a rotation is true?**

- A. It preserves distance from the center of rotation.
- B. It always changes orientation.
- C. It changes every segment length.
- D. It always sends  $x$  to  $-x$ .

**5.3. A rotation turns a figure around:**

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

**6. Which transformation is not a rigid motion?**



Rigid motions preserve size and shape, but a dilation changes scale even when it keeps points on the same rays.

- A. Translation
- B. Rotation
- C. Reflection
- D. Dilation

**6.3. A rotation turns a figure around:**

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

**4.1. A translation does what?**

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

**4.4. Congruent figures have:**

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

**5.1. A translation does what?**

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

**5.4. Congruent figures have:**

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

**6.1. A translation does what?**

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

**6.4. Congruent figures have:**

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

**4.2. A reflection creates:**

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

**4.5. Similar figures have:**

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

**5.2. A reflection creates:**

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

**5.5. Similar figures have:**

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

**6.2. A reflection creates:**

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

**6.5. Similar figures have:**

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

**7. Which transformation reverses orientation?**

- A. Reflection
- B. Translation
- C. Rotation
- D. A composition of translations

7.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

7.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

7.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

7.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

7.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

**8. Which transformation changes size but preserves shape?**

- A. Dilation
- B. Rotation
- C. Reflection
- D. Translation

8.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

8.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

8.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

8.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

8.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

**9. Which transformation maps the line  $x = 2$  to the line  $x = -2$ ?**

- A. Reflection across the y-axis
- B. Reflection across the x-axis
- C. Translation up 2
- D. Rotation 180 degrees about (2, 0)

9.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

9.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

9.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

9.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

9.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

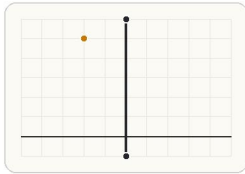
10. Which point stays fixed under reflection across the y-axis?

- A. (3, 0)
- B. (2, 2)
- C. (0, 3)
- D. (-4, 1)

10.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

11. Point P(-2, 5) is reflected across the y-axis. Which ordered pair is the image?



A reflection across the y-axis reverses the sign of x and keeps y unchanged.

- A. (-2, -5)
- B. (5, -2)
- C. (2, 5)
- D. (2, -5)

11.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

12. What is the image of (4, -2) after a reflection across the x-axis?

- A. (4, 2)
- B. (-4, -2)
- C. (-4, 2)
- D. (2, 4)

12.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

10.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

10.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

11.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

11.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

12.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

12.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

10.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

10.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

11.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

11.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

12.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

12.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

**13. What is the image of  $(-3, 5)$  after a reflection across the  $y$ -axis?**

- A.  $(-3, -5)$
- B.  $(5, -3)$
- C.  $(3, 5)$
- D.  $(3, -5)$

**13.3. A rotation turns a figure around:**

- A. a mirror line
- B. a center point
- C. the  $x$ -axis only
- D. its longest side

**14. Rotate  $(-2, 4)$  180 degrees about the origin.**

- A.  $(-4, 2)$
- B.  $(4, -2)$
- C.  $(2, 4)$
- D.  $(2, -4)$

**14.3. A rotation turns a figure around:**

- A. a mirror line
- B. a center point
- C. the  $x$ -axis only
- D. its longest side

**15. Point P is at  $(2, -1)$ . A translation sends every point right 3 and up 4. Where is P'?**

- A.  $(-1, 3)$
- B.  $(5, -5)$
- C.  $(5, 3)$
- D.  $(1, 3)$

**15.3. A rotation turns a figure around:**

- A. a mirror line
- B. a center point
- C. the  $x$ -axis only
- D. its longest side

**13.1. A translation does what?**

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

**13.4. Congruent figures have:**

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

**14.1. A translation does what?**

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

**14.4. Congruent figures have:**

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

**15.1. A translation does what?**

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

**15.4. Congruent figures have:**

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

**13.2. A reflection creates:**

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

**13.5. Similar figures have:**

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

**14.2. A reflection creates:**

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

**14.5. Similar figures have:**

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

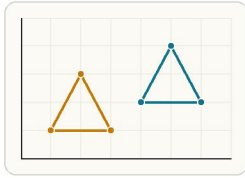
**15.2. A reflection creates:**

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

**15.5. Similar figures have:**

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

16. Which transformation maps triangle ABC to triangle A'B'C' on the grid?



A translation shifts each point by the same distance in the same direction.

- A. Reflection across the x-axis
- B. Rotation about the origin
- C. Dilation
- D. Translation

16.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

17. A figure will be dilated from the origin by a scale factor of  $\frac{1}{2}$ . What should happen to each coordinate?

- A. Add  $\frac{1}{2}$  to both coordinates.
- B. Subtract  $\frac{1}{2}$  from both coordinates.
- C. Multiply both coordinates by  $\frac{1}{2}$ .
- D. Switch the coordinates.

17.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

18. If you want to show two figures are congruent using transformations, what must you check?

- A. Their side lengths add to the same total.
- B. A sequence of rigid motions maps one figure exactly onto the other.
- C. One figure can be stretched to fit the other.
- D. Their areas are both positive.

18.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

16.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

16.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

17.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

17.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

18.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

18.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

16.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

16.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

17.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

17.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

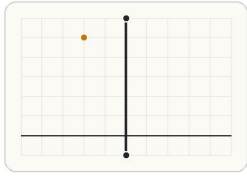
18.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

18.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

19. A student says reflecting  $(-2, 5)$  across the  $x$ -axis gives  $(2, -5)$ . What is the mistake?



Across the  $x$ -axis, the  $y$ -coordinate changes sign while the  $x$ -coordinate stays the same.

- A. Both coordinates should stay the same.
- B. The  $x$ -coordinate should stay  $-2$ ; only the  $y$ -coordinate changes sign.
- C. The  $y$ -coordinate should become  $5$ , not  $-5$ .
- D. A reflection across the  $x$ -axis doubles both coordinates.

19.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the  $x$ -axis only
- D. its longest side

20. A student says translating  $(2, 3)$  by  $(4, -1)$  gives  $(6, 4)$ . What is the mistake?

- A. The student added  $1$  instead of subtracting  $1$  from  $y$ .
- B. The student should have subtracted  $4$  from  $x$ .
- C. Translations cannot use negative numbers.
- D. The  $x$ -coordinate should stay  $2$ .

20.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the  $x$ -axis only
- D. its longest side

19.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

19.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

20.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

20.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

19.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

19.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

20.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

20.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

21. Point A is at (1, 2). Translate it 4 units right and 1 unit down. Where is A'? Answer as an ordered pair.



A translation adds to one coordinate and subtracts from the other according to the direction.

21.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

21.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

21.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

21.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

21.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

22. What is the composition of two reflections across parallel lines?

- A. A dilation
- B. A single reflection
- C. A translation
- D. A shear

22.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

22.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

22.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

22.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

22.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

23. A dilation sends  $P(2, 1)$  to  $P'(6, 3)$  with center at the origin. What is the scale factor?

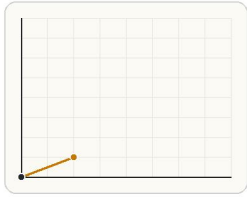


Image coordinates scale away from the origin by the dilation factor.

- A. 2
- B.  $\frac{1}{3}$
- C. 3
- D. 4

23.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

23.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

23.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

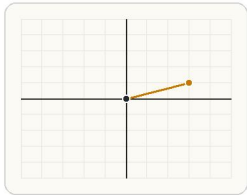
23.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

23.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

24. Point  $Q(3, 1)$  is rotated 90 degrees counterclockwise about the origin. Which ordered pair is the image?



Rotations keep distance from the origin while changing direction.

- A. (1, 3)
- B. (-3, -1)
- C. (-1, 3)
- D. (3, -1)

24.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

24.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

24.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

24.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

24.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

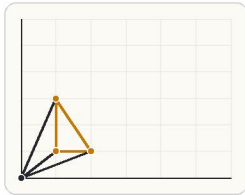
25. Rotate the point (2, -1) 90 degrees counterclockwise about the origin.

- A. (1, 2)
- B. (-1, -2)
- C. (-2, 1)
- D. (2, 1)

25.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

26. A student says a dilation preserves all side lengths. What is wrong?



A dilation changes size by a scale factor but keeps corresponding points on the same rays from the center.

- A. A dilation preserves angle measure, but it changes lengths by a scale factor.
- B. A dilation changes angle measure but preserves lengths.
- C. A dilation only works on circles.
- D. A dilation is the same as a translation.

26.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

27. A segment of length 3 is dilated by a scale factor of 4. What is the image length? Answer with a number.

27.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

25.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

25.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

26.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

26.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

27.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

27.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

25.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

25.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

26.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

26.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

27.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

27.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

**28. A polygon has perimeter 8. After a dilation with scale factor 3, what is the new perimeter? Answer with a number.**

28.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

**29. Student A says rotating (1, 4) 90 degrees clockwise about the origin gives (4, -1). Student B says it gives (-4, 1). Who is correct?**

- A. Student B
- B. Both students
- C. Neither student
- D. Student A

29.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

**30. Which explanation best justifies that a figure and its rotated image are congruent?**

- A. Rotation is a rigid motion, so it preserves side lengths and angle measures.
- B. The image looks the same size on the page.
- C. The coordinates all stay positive.
- D. Rotations always move figures upward.

30.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

28.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

28.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

29.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

29.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

30.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
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- A. the same shape only
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28.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

28.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

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- A. A larger copy
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29.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

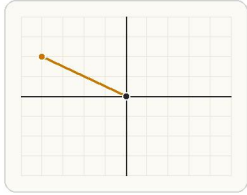
30.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

30.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

31. Point R is at  $(-4, 2)$ . After a 180-degree rotation about the origin, where is R'? Answer as an ordered pair.



A 180-degree rotation about the origin sends  $(x, y)$  to  $(-x, -y)$ .

31.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

31.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

31.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

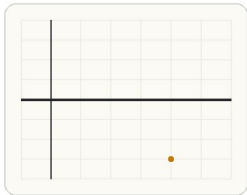
31.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

31.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only

32. Point S is at  $(4, -3)$ . Reflect it across the x-axis. Where is S'? Answer as an ordered pair.



Across the x-axis, the sign of  $y$  changes while  $x$  stays fixed.

32.1. A translation does what?

- A. Turns a figure
- B. Slides a figure
- C. Resizes a figure
- D. Flips a figure

32.2. A reflection creates:

- A. A larger copy
- B. A mirror image
- C. A rotated copy only
- D. A figure with different side lengths

32.3. A rotation turns a figure around:

- A. a mirror line
- B. a center point
- C. the x-axis only
- D. its longest side

32.4. Congruent figures have:

- A. the same shape only
- B. the same size only
- C. the same shape and size
- D. the same perimeter only

32.5. Similar figures have:

- A. equal area only
- B. the same shape with proportional side lengths
- C. the same size only
- D. parallel sides only