

G.CO.B.6: Properties of Transformations 1

- The image of $\triangle ABC$ after the transformation $r_{y\text{-axis}}$ is $\triangle A'B'C'$. Which property is *not* preserved?
 - distance
 - orientation
 - collinearity
 - angle measure
- Triangle ABC has the coordinates $A(1,2)$, $B(5,2)$, and $C(5,5)$. Triangle ABC is rotated 180° about the origin to form triangle $A'B'C'$. Triangle $A'B'C'$ is
 - acute
 - isosceles
 - obtuse
 - right
- If $\triangle W'X'Y'$ is the image of $\triangle WXY$ after the transformation R_{90° , which statement is *false*?
 - $\overline{XY} = \overline{X'Y'}$
 - $\overline{WX} \parallel \overline{W'X'}$
 - $\triangle WXY \cong \triangle W'X'Y'$
 - $m\angle XWY = m\angle X'W'Y'$
- Triangle ABC has the coordinates $A(3,0)$, $B(3,8)$, and $C(6,6)$. If $\triangle ABC$ is reflected over the line $y = x$, which statement is true about the image of $\triangle ABC$?
 - One point remains fixed.
 - The size of the triangle changes.
 - The orientation does not change.
 - One side of $\triangle ABC$ is parallel to the line $y = x$.
- After the transformation $r_{y=x}$, the image of $\triangle ABC$ is $\triangle A'B'C'$. If $AB = 2x + 13$ and $A'B' = 9x - 8$, find the value of x .
- When a quadrilateral is reflected over the line $y = x$, which geometric relationship is *not* preserved?
 - congruence
 - orientation
 - parallelism
 - perpendicularity
- Quadrilateral $MNOP$ is a trapezoid with $\overline{MN} \parallel \overline{OP}$. If $M'N'O'P'$ is the image of $MNOP$ after a reflection over the x -axis, which two sides of quadrilateral $M'N'O'P'$ are parallel?
 - $\overline{M'N'}$ and $\overline{O'P'}$
 - $\overline{M'N'}$ and $\overline{N'O'}$
 - $\overline{P'M'}$ and $\overline{O'P'}$
 - $\overline{P'M'}$ and $\overline{N'O'}$
- The vertices of parallelogram $ABCD$ are $A(2,0)$, $B(0,-3)$, $C(3,-3)$, and $D(5,0)$. If $ABCD$ is reflected over the x -axis, how many vertices remain invariant?
 - 1
 - 2
 - 3
 - 0

- 9 The image of rhombus $VWXY$ preserves which properties under the transformation $T_{2,-3}$?
- 1) parallelism, only
 - 2) orientation, only
 - 3) both parallelism and orientation
 - 4) neither parallelism nor orientation
- 10 Pentagon $PQRST$ has \overline{PQ} parallel to \overline{TS} . After a translation of $T_{2,-5}$, which line segment is parallel to $\overline{P'Q'}$?
- 1) $\overline{R'Q'}$
 - 2) $\overline{R'S'}$
 - 3) $\overline{T'S'}$
 - 4) $\overline{T'P'}$
- 11 A property not preserved under a line reflection is
- 1) angle measure
 - 2) collinearity
 - 3) distance
 - 4) orientation
- 12 A line reflection preserves
- 1) distance and orientation
 - 2) angle measurement and orientation
 - 3) distance, but not angle measurement
 - 4) distance and angle measurement
- 13 Which property is not preserved by a glide reflection?
- 1) betweenness
 - 2) angle measure
 - 3) orientation
 - 4) collinearity

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Answer Section

1 ANS: 2 REF: 081515ge KEY: basic

2 ANS: 4

Distance is preserved after a rotation.

REF: 081304ge KEY: basic

3 ANS: 2 REF: 061509ge KEY: basic

4 ANS: 1

$C(6,6)$ remains fixed after the reflection.

REF: 011622ge KEY: basic

5 ANS:

Distance is preserved after the reflection. $2x + 13 = 9x - 8$

$$21 = 7x$$

$$3 = x$$

REF: 011329ge KEY: basic

6 ANS: 2 REF: 011211ge KEY: basic

7 ANS: 1 REF: 011102ge KEY: basic

8 ANS: 2 REF: 081202ge KEY: basic

9 ANS: 3 REF: 061421ge KEY: basic

10 ANS: 3 REF: 081104ge KEY: basic

11 ANS: 4 REF: 068030siii KEY: basic

12 ANS: 4 REF: 088421siii KEY: basic

13 ANS: 3 REF: 088617siii KEY: basic