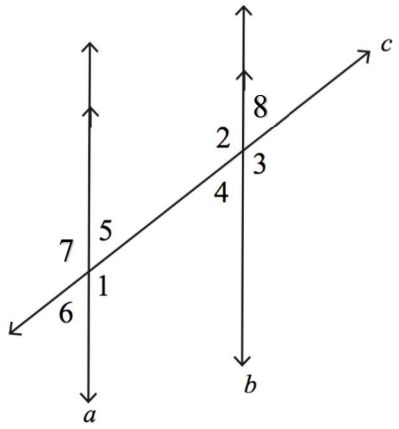
Geometry Midterm Review

MA.912.GR.1.1 (Level 2)

In the image, $m \parallel n$. The $m\angle 6 = 67°$.



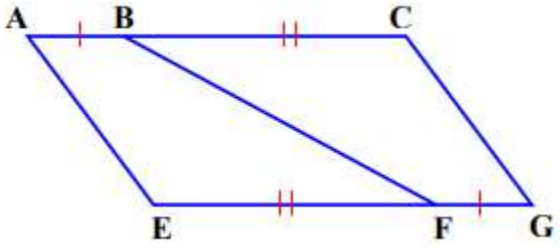
Which statements are true? **Select all that apply**.

- ☐ $\angle 6$ and $\angle 7$ are vertical angles that each measure 67°.
- ☐ $\angle 5$ and $\angle 6$ are vertical angles that each measure 67°.
- ☐ $\angle 4$ and $\angle 6$ are corresponding angles that each measure 67°.
- ☐ $\angle 4$ and $\angle 7$ are corresponding angles that each measure 67°.
- ☐ $\angle 3$ and $\angle 5$ are alternate interior angles that each measure 113°.
- ☐ $\angle 3$ and $\angle 7$ are alternate exterior angles that each measure 113°.
- ☐ $\angle 4$ and $\angle 5$ are consecutive interior angles that measure 67° and 113°, respectively.

MA.912.GR.1.1 (Level 3)

Use the word banks below to complete the paragraph proof.

Given: $\overline{AB} \cong \overline{FG}$; $\overline{BC} \cong \overline{EF}$
Prove: $\overline{AC} \cong \overline{EG}$



We are given that $\overline{AB} \cong \overline{FG}$ and $\overline{BC} \cong \overline{EF}$.

By the ___1___, $AB + BC = AC$ and $FG + FE = EG$.

By the substitution property of equality, $AB + BC = EG$.

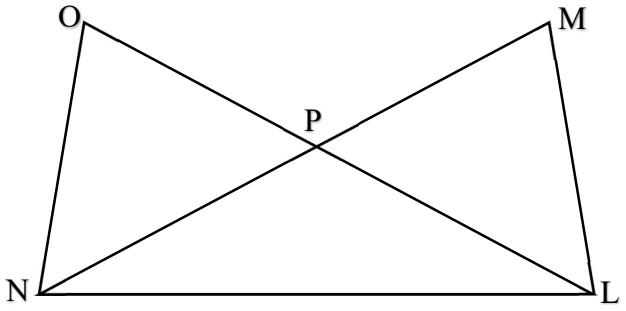
By the ___2___ of equality, $AC = EG$; therefore by the definition of congruence, $\overline{AC} \cong \overline{EG}$.

Blank #1	Blank #2
angle addition postulate	substitution property
segment addition postulate	transitive property
definition of complementary angles	reflexive property
definition of supplementary angles	symmetric property

MA.912.GR.1.2 (Level 2)

Fill in the blank using the available answer choices.

Given: $\overline{LM} \cong \overline{NO}; \overline{LO} \cong \overline{NM}$
Prove: $\Delta LON \cong \Delta NML$

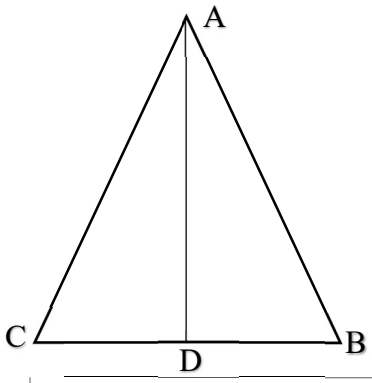


1. $\overline{LM} \cong \overline{NO}; \overline{LO} \cong \overline{NM}$.	1. Given
2. $\overline{LN} \cong \overline{LN}$	2. Reflexive Property of Congruence
3. $\Delta LON \cong \Delta NML$	3. **Circle One:** • Side-Side-Side (SSS) • Side-Angle-Side (SAS) • Angle-Side-Angle (ASA) • Angle-Angle-Side (AAS) • Hypotenuse-Leg (HL)

MA.912.GR.1.2 (Level 3)

Fill in the blank using the available answer choices.

Given: $\overline{AD}$ bisects $\angle CAB$; $\overline{AC} \cong \overline{AB}$
Prove: $\angle B \cong \angle C$



1. $\overline{AD}$ bisects $\angle CAB$	1. Given
2. $\angle CAD \cong \angle BAD$	2. **Circle one**: • Definition of Angle Bisector • Definition of Segment Bisector • Angle Addition Postulate • Segment Addition Postulate • Vertical Angles are Congruent
3. $\overline{AC} \cong \overline{AB}$	3. Given
4. $\overline{AD} \cong \overline{AD}$	4. Reflexive Property of Congruence
5. $\Delta CAD \cong \Delta BAD$	5. **Circle one**: • Side-Side-Side (SSS) • Side-Angle-Side (SAS) • Angle-Side-Angle (ASA) • Angle-Angle-Side (AAS) • Hypotenuse-Leg (HL)
6. $\angle B \cong \angle C$	6. Corresponding parts of congruent triangles are congruent (CPCTC)

MA.912.GR.1.3 (Level 2)

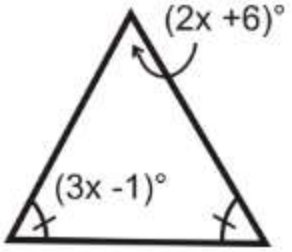
Two interior angles of a triangle measure 32° and 64°.

What is the measure of the third interior angle of the triangle?

- $m\angle 3 =$ _____ °

MA.912.GR.1.3 (Level 3)

The angle measures of the triangle are shown.



The value of x is:

A. 2
B. 16.6
C. 22
D. 23

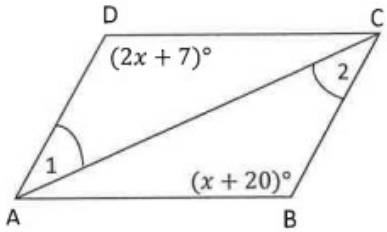
The triangle has angle measures of:

A. $50°, 65°, 65°$
B. $50°, 50°, 65°$
C. $44°, 68°, 68°$
D. $44°, 44°, 68°$

MA.912.GR.1.6 (Level 3)

In quadrilateral $ABCD$, $\overline{AD} \cong \overline{BC}$ *and* $\angle 1 \cong \angle 2$.

Find $m\angle B$.



- $m\angle B =$ _____ °

MA.912.GR.2.1 (Level 2)

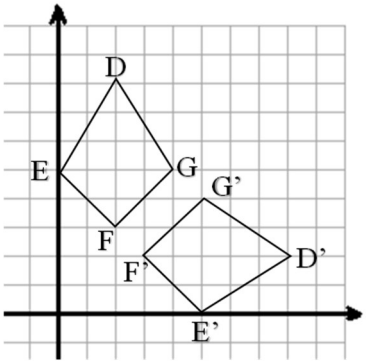
The coordinates of the image of a point with coordinates $(-2,6)$ is $(-4,13)$.

Use the table to complete the transformation rule.

	+, −	0, 1, 2, 3, 4, 5, 6, 7, 8, 9		+, −	0, 1, 2, 3, 4, 5, 6, 7, 8, 9	
$(x, y) \rightarrow (x$			$, y$			)

MA.912.GR.2.1 (Level 3)

$DEFG$ goes through a transformation that results in $D'E'F'G'$ as shown.



Which of the following statements correctly describes a transformation that maps $DEFG$ onto $D'E'F'G'$?

Select all that apply.

- ☐ A translation right one and down one
- ☐ A translation left five and up five
- ☐ A rotation $90°$ clockwise about the origin
- ☐ A reflection in the line $y = x$
- ☐ $(x, y) \rightarrow (y, x)$
- ☐ $(x, y) \rightarrow (x + 5,\ y + 5)$
- ☐ $(x, y) \rightarrow (y, -x)$
- ☐ $(x, y) \rightarrow (x - 1, y - 1)$

MA.912.GR.2.3 (Level 2)

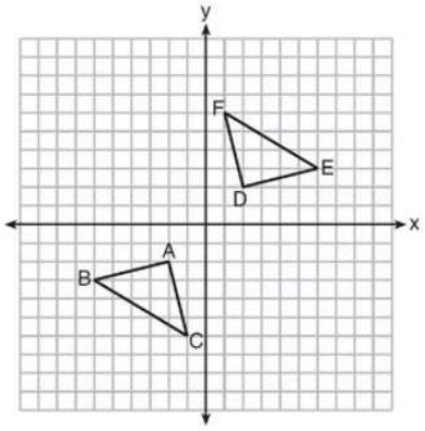
Which sequences of transformations map ΔABC onto ΔDEF?

A. Reflect in the x −axis, then reflect in the y −axis.

B. Reflect in the x −axis, then translate 4 units right.

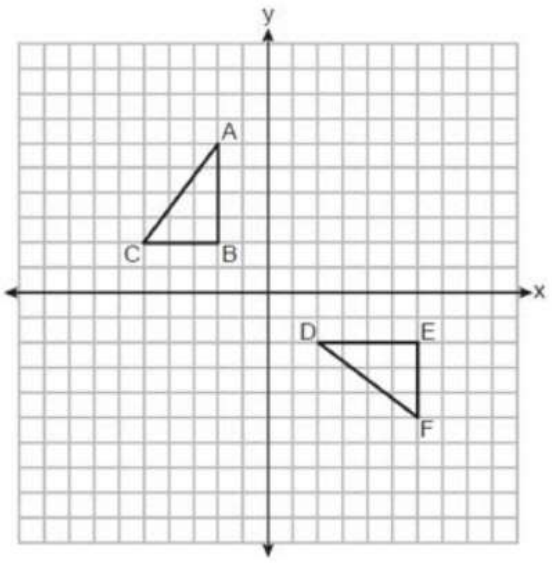
C. Reflect in the y −axis, then translate 4 units up.

D. Translate 4 units up, then reflect in the y −axis.



MA.912.GR.2.3 (Level 3)

Which sequences of transformations map ΔABC onto ΔDEF?



A. Step 1: $(x, y) \rightarrow (-y, x)$
Step 2: $(x, y) \rightarrow (x + 8, y)$

B. Step 1: $(x, y) \rightarrow (-y, x)$
Step 2: $(x, y) \rightarrow (-x, y)$

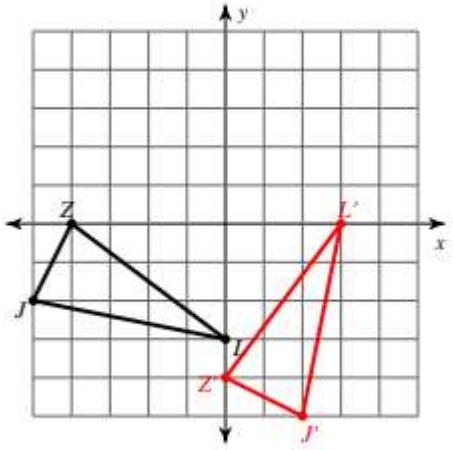
C. Step 1: $(x, y) \rightarrow (-y, x)$
Step 2: $(x, y) \rightarrow (x, y - 4)$

D. Step 1: $(x, y) \rightarrow (-y, x)$
Step 2: $(x, y) \rightarrow (x, -y)$

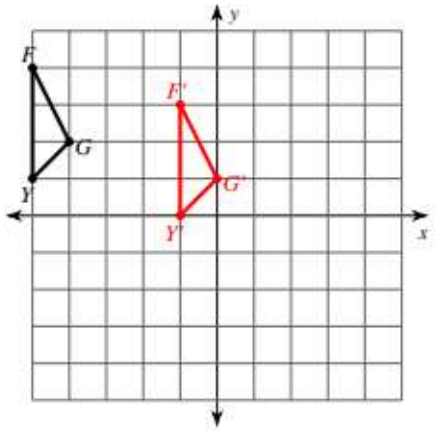
MA.912.GR.2.5 (Level 2)

Given the shaded figure on the coordinate plane below, which graph shows the correct transformation of a reflection of the figure in the x –axis?

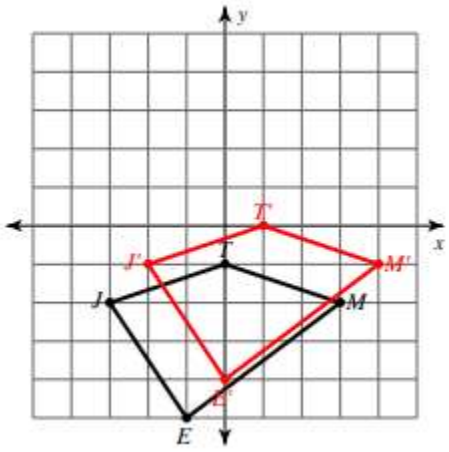
A.



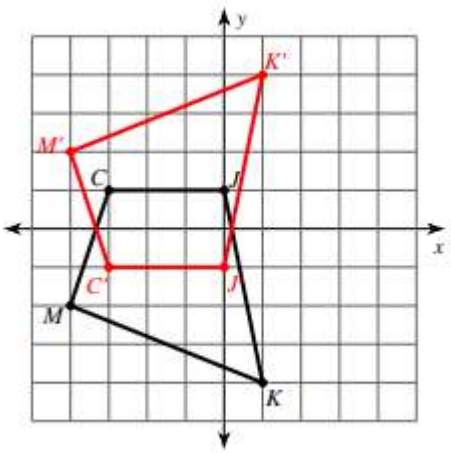
C.



B.

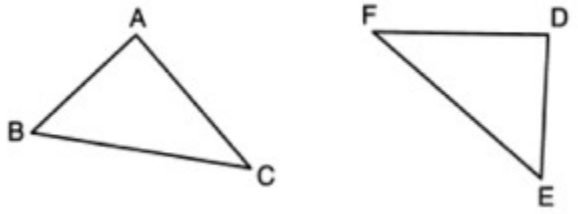


D.



MA.912.GR.2.6 (Level 2)

ΔABC was transformed into ΔDEF using rigid motions.

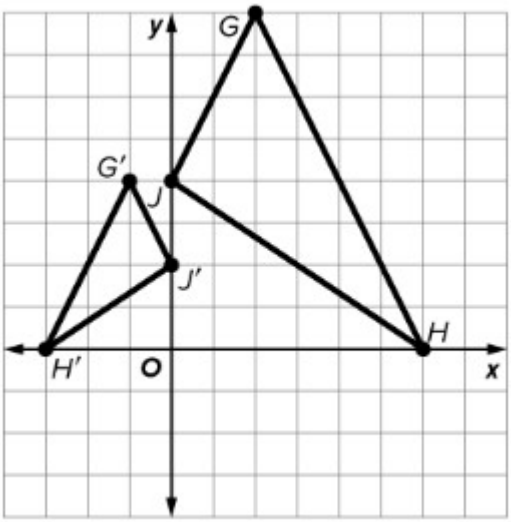


Put a check mark in the appropriate box to identify the corresponding sides and angles.

Sides	$\overline{FE}$	$\overline{FD}$	$\overline{DE}$
$\overline{AB}$			
$\overline{BC}$			
$\overline{CA}$			
Angles	$\angle F$	$\angle D$	$\angle E$
$\angle A$			
$\angle B$			
$\angle C$			

MA.912.GR.2.6 (Level 3)

ΔGHJ and $\Delta G'H'J'$ are shown on a coordinate grid below.

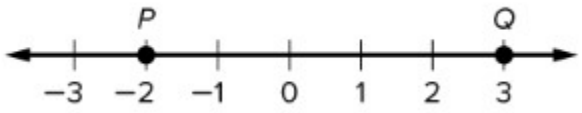


- Is $\angle H \cong \angle H'$? **Circle one:** Yes No

MA.912.GR.3.1 (Level 3)

If point P has a weight of 3 and point Q has a weight of 1, find point K, so that it is the weighted average of points P and Q.

- Write your answer to the nearest tenth (two decimal places).



A. -0.75

B. -0.5

C. 0.5

D. 1.75

MA.912.GR.3.2 (Level 3)

Given ΔJKL with vertices $J(0,\ 1)$, $K(7,\ 0)$, and $L(5,\ 6)$, classify the triangle. **Select all that apply**.

- ☐ Acute
- ☐ Obtuse
- ☐ Right
- ☐ Equilateral
- ☐ Isosceles
- ☐ Scalene

MA.912.GR.3.3 (Level 2)

The endpoints of $\overline{CD}$ are given below. Find the coordinates of the midpoint M.

- $C(-2,7)$
- $D(4,11)$

A. $(1,\ 9)$

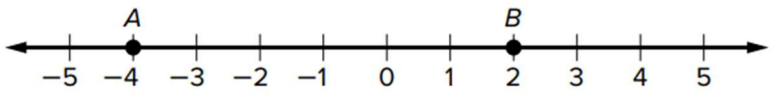
B. $(-1,\ 9)$

C. $(1,\ -9)$

D. $(-1,\ -9)$

MA.912.GR.3.3 (Level 3)

Find X on $\overline{AB}$ such that the ratio of AX to XB is $1:3$



- X is located at _____

MA.912.GR.3.4 (Level 2)

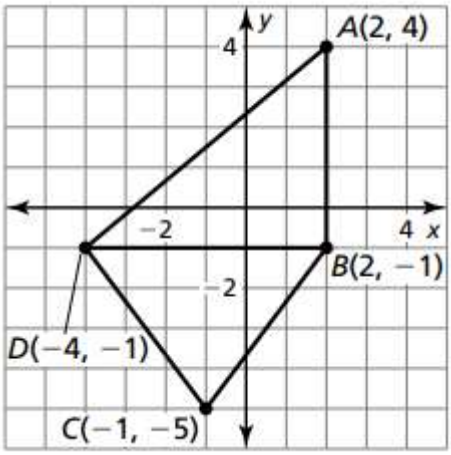
What is the perimeter of the ΔABD?

A. 17

B. 18.8

C. 14.3

D. 12



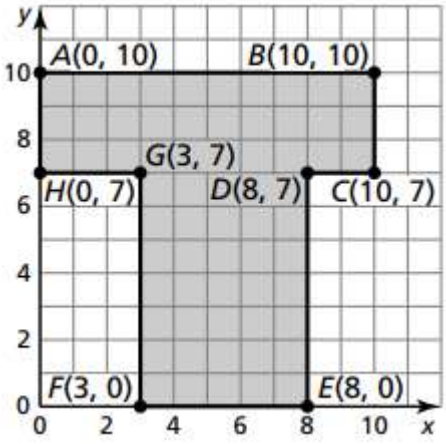
MA.912.GR.3.4 (Level 3)

You are buying tile for your bathroom floor and baseboards for your bathroom walls. In the figure, the entire polygon represents the layout of the floor. Each unit in the coordinate plane represents 1 foot.

The cost of the baseboard is $2 per foot. The cost of the tile is $2.50 per square foot.

Find the total cost to buy tile and baseboards for your bathroom.

- The total cost is $_____.



MA.912.GR.4.4 (Level 3)

A trapezoid with area 60 square inches has a base that is 5 inches long and a height of 8 inches.

What is the length of the other base?

- The other base is _____ inches long.

MA.912.LT.4.3 (Level 2)

Identify the hypothesis of the following conditional statement.

If Renegade (the FSU Mascot) is at a football game, then the Seminoles have home field advantage.

A. The Seminoles do not have home field advantage.

B. Renegade is the FSU Mascot.

C. Renegade (the FSU Mascot) is at a football game.

D. The Seminoles have home field advantage.

MA.912.LT.4.3 (Level 2)

Identify the contrapositive of the following conditional statement.

If two angles are a linear pair, then they are adjacent.

A. If two angles are not a linear pair, then they are not adjacent.

B. If two angles are adjacent, then they are a linear pair.

C. If two angles are adjacent, then they are not a linear pair.

D. If two angles are not adjacent, then they are not a linear pair.

MA.912.LT.4.10 (Level 2)

Which of the following statements about parallel lines cut by a transversal is valid?

A. Alternate interior angles are supplementary.

B. Corresponding angles are congruent.

C. Alternate exterior angles are complementary.

D. Consecutive (or same-side) interior angles are supplementary.

MA.912.LT.4.10 (Level 3)

Michaela claims that a triangle with sides measuring 3 centimeters and 4 centimeters must have a third side measuring 5 centimeters.

Which of the following possible third side lengths can be used as a counterexample to her statement?

Select all that apply.

- ☐ 2 centimeters
- ☐ 3 centimeters
- ☐ 5 centimeters
- ☐ 6 centimeters
- ☐ 7 centimeters
- ☐ 8 centimeters