

Geometry-R Thanksgiving Break Packet

Score: _____

Period: _____

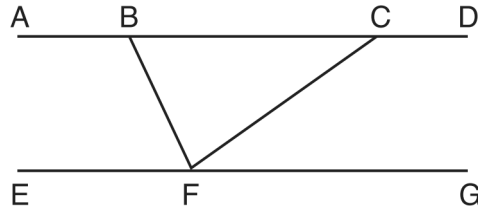
Name: _____

Date: _____

Answer all questions. You must show your work on all questions, except for the multiple choice questions, in order to receive full credit. Due Monday, 11/27/2017. 20% off late per day every day after Monday 11/27/2017. This will count as a quiz grade.

1. Steve drew line segments $ABCD$, EFG , BF , and CF as shown in the diagram below. Scalene $\triangle BFC$ is formed.

1.

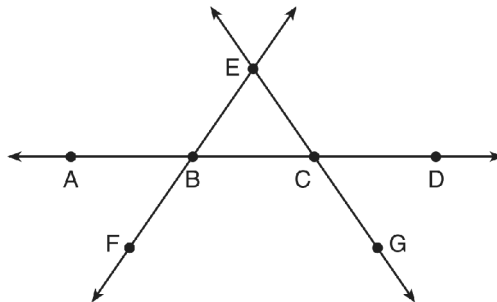


Which statement will allow Steve to prove $\overline{ABCD} \parallel \overline{EFG}$?

- A. $\angle CFG \cong \angle FCB$ B. $\angle ABF \cong \angle BFC$
 C. $\angle EFB \cong \angle CFB$ D. $\angle CBF \cong \angle GFC$

2. In the diagram below, \overleftrightarrow{FE} bisects \overline{AC} at B , and \overleftrightarrow{GE} bisects \overline{BD} at C .

2.

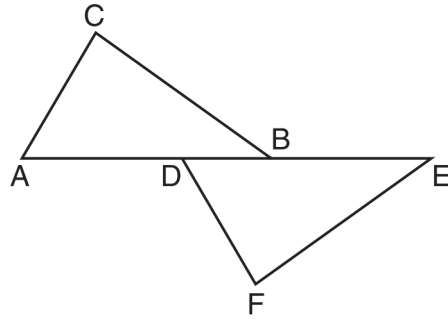


Which statement is always true?

- A. $\overline{AB} \cong \overline{DC}$ B. $\overline{FB} \cong \overline{EB}$
 C. \overleftrightarrow{BD} bisects \overline{GE} at C . D. \overleftrightarrow{AC} bisects \overline{FE} at B .

3. Kelly is completing a proof based on the figure below.

3.



She was given that $\angle A \cong \angle EDF$, and has already proven $\overline{AB} \cong \overline{DE}$. Which pair of corresponding parts and triangle congruency method would *not* prove $\triangle ABC \cong \triangle DEF$?

- A. $\overline{AC} \cong \overline{DF}$ and SAS
- B. $\overline{BC} \cong \overline{EF}$ and SAS
- C. $\angle C \cong \angle F$ and AAS
- D. $\angle CBA \cong \angle FED$ and ASA

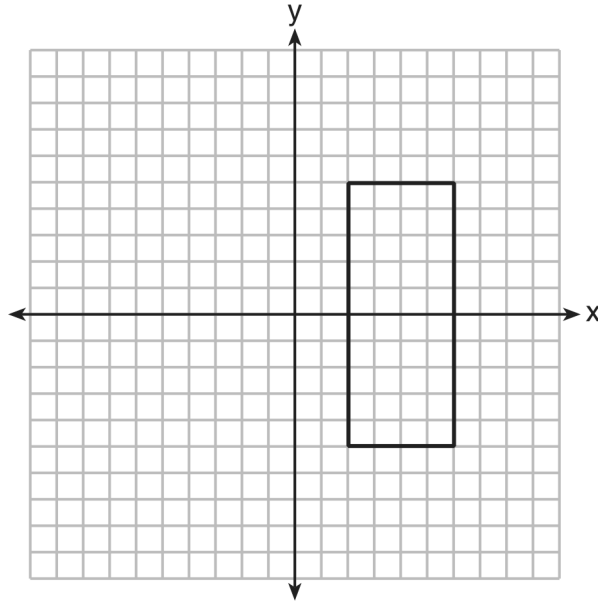
4. Given $\triangle ABC \cong \triangle DEF$, which statement is *not* always true?

4.

- A. $\overline{BC} \cong \overline{DF}$
- B. $m\angle A = m\angle D$
- C. area of $\triangle ABC =$ area of $\triangle DEF$
- D. perimeter of $\triangle ABC =$ perimeter of $\triangle DEF$

5. As shown in the graph below, the quadrilateral is a rectangle.

5.

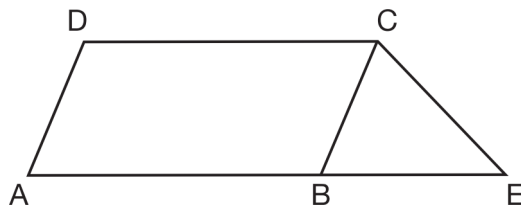


Which transformation would *not* map the rectangle onto itself?

- A. a reflection over the x -axis
- B. a reflection over the line $x = 4$
- C. a rotation of 180° about the origin
- D. a rotation of 180° about the point $(4, 0)$

6. In the diagram below, $ABCD$ is a parallelogram, \overline{AB} is extended through B to E , and \overline{CE} is drawn.

6.

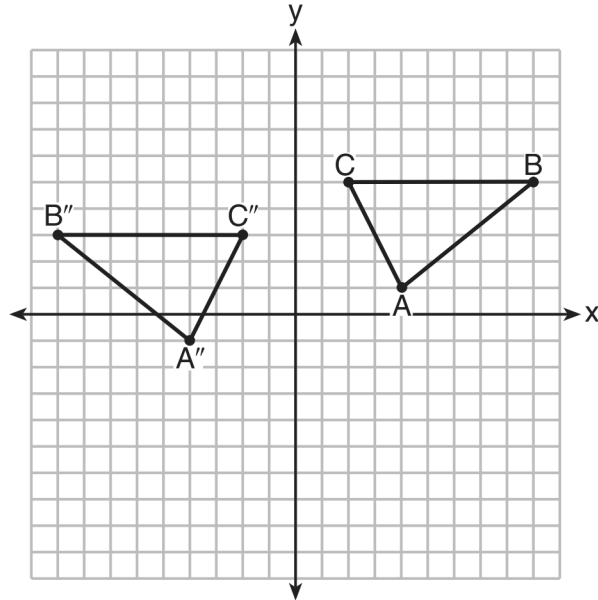


If $\overline{CE} \cong \overline{BE}$ and $m\angle D = 112^\circ$, what is $m\angle E$?

- A. 44°
- B. 56°
- C. 68°
- D. 112°

7. The graph below shows $\triangle ABC$ and its image, $\triangle A''B''C''$.

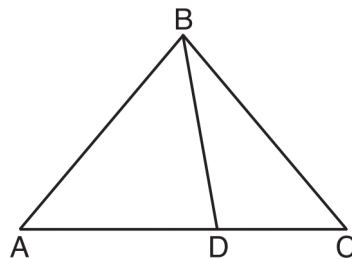
7.



Describe a sequence of rigid motions which would map $\triangle ABC$ onto $\triangle A''B''C''$.

8. In the diagram below, $m\angle BDC = 100^\circ$, $m\angle A = 50^\circ$, and $m\angle DBC = 30^\circ$.

8.

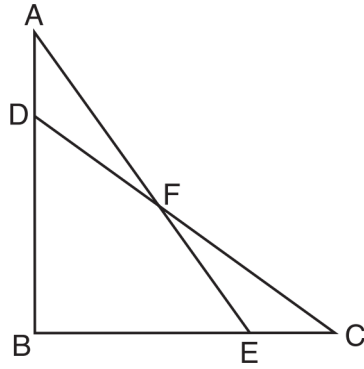


Which statement is true?

- A. $\triangle ABD$ is obtuse.
- B. $\triangle ABC$ is isosceles.
- C. $m\angle ABD = 80^\circ$
- D. $\triangle ABD$ is scalene.

9. Given: $\triangle ABE$ and $\triangle CBD$ shown in the diagram below with $\overline{DB} \cong \overline{BE}$

9.

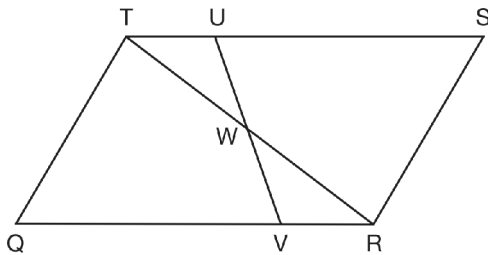


Which statement is needed to prove $\triangle ABE \cong \triangle CBD$ using only $SAS \cong SAS$?

- A. $\angle CDB \cong \angle AEB$
- B. $\angle AFD \cong \angle EFC$
- C. $\overline{AD} \cong \overline{CE}$
- D. $\overline{AE} \cong \overline{CD}$

10. In parallelogram $QRST$ shown below, diagonal \overline{TR} is drawn, U and V are points on \overline{TS} and \overline{QR} , respectively, and \overline{UV} intersects \overline{TR} at W .

10.

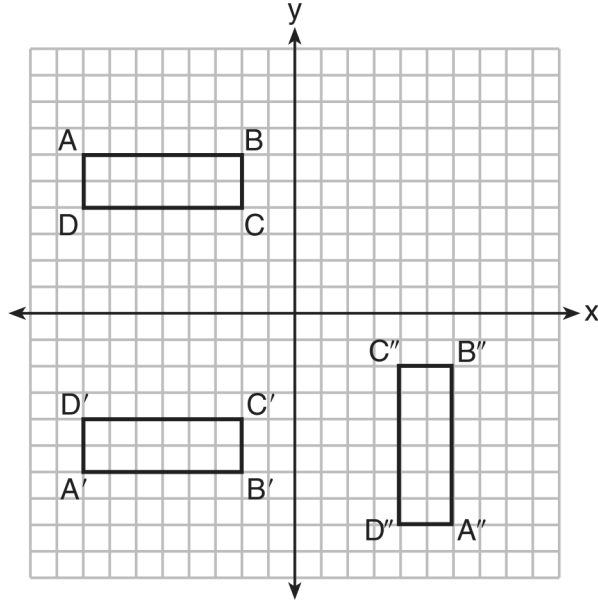


If $m\angle S = 60^\circ$, $m\angle SRT = 83^\circ$, and $m\angle TWU = 35^\circ$, what is $m\angle WVQ$?

- A. 37°
- B. 60°
- C. 72°
- D. 83°

11. A sequence of transformations maps rectangle $ABCD$ onto rectangle $A''B''C''D''$, as shown in the diagram below.

11.

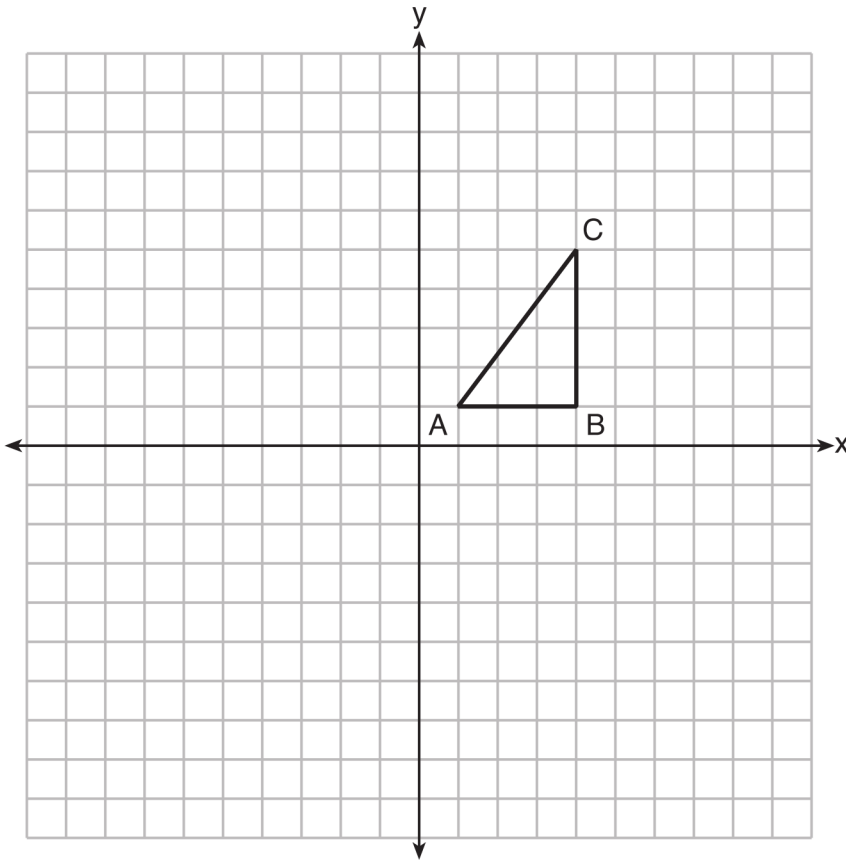


Which sequence of transformations maps $ABCD$ onto $A'B'C'D'$ and then maps $A'B'C'D'$ onto $A''B''C''D''$?

- A. a reflection followed by a rotation
- B. a reflection followed by a translation
- C. a translation followed by a rotation
- D. a translation followed by a reflection

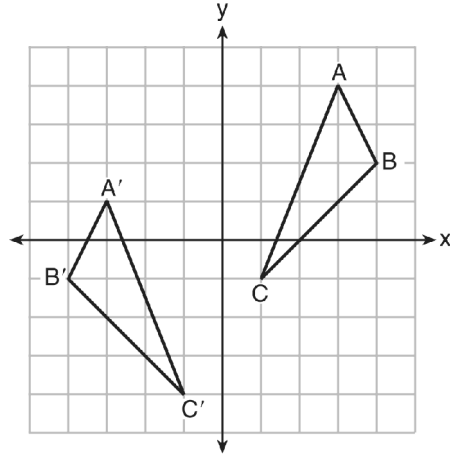
12. In the diagram below, $\triangle ABC$ has coordinates $A(1, 1)$, $B(4, 1)$, and $C(4, 5)$. Graph and label $\triangle A'B'C'$, the image of $\triangle ABC$ after the translation five units to the right and two units up followed by the reflection over the line $y = 0$.

12.



13. As graphed on the set of axes below, $\triangle A'B'C'$ is the image of $\triangle ABC$ after a sequence of transformations.

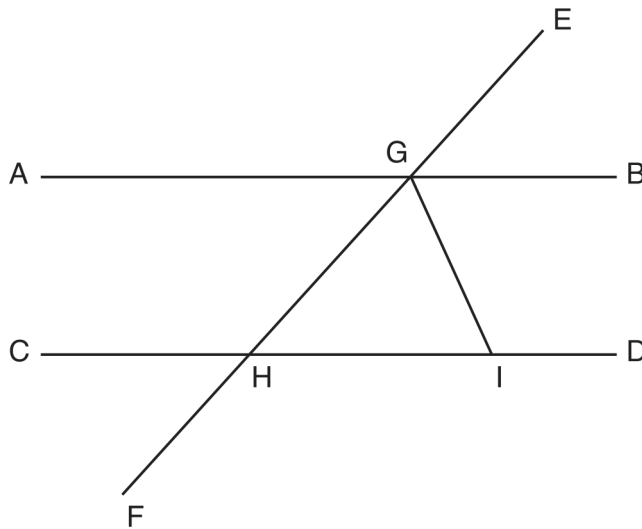
13.



Is $\triangle A'B'C'$ congruent to $\triangle ABC$? Use the properties of rigid motion to explain your answer.

14. In the diagram below, \overline{EF} intersects \overline{AB} and \overline{CD} at G and H , respectively, and \overline{GI} is drawn such that $\overline{GH} \cong \overline{IH}$.

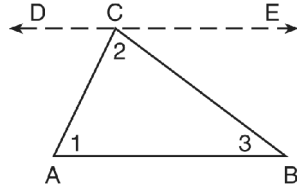
14.



If $m\angle EGB = 50^\circ$ and $m\angle DIG = 115^\circ$, explain why $\overline{AB} \parallel \overline{CD}$.

15. Given the theorem, "The sum of the measures of the interior angles of a triangle is 180° ," complete the proof for this theorem.

15.



Given: $\triangle ABC$

Prove: $m\angle 1 + m\angle 2 + m\angle 3 = 180^\circ$

Fill in the missing reasons below

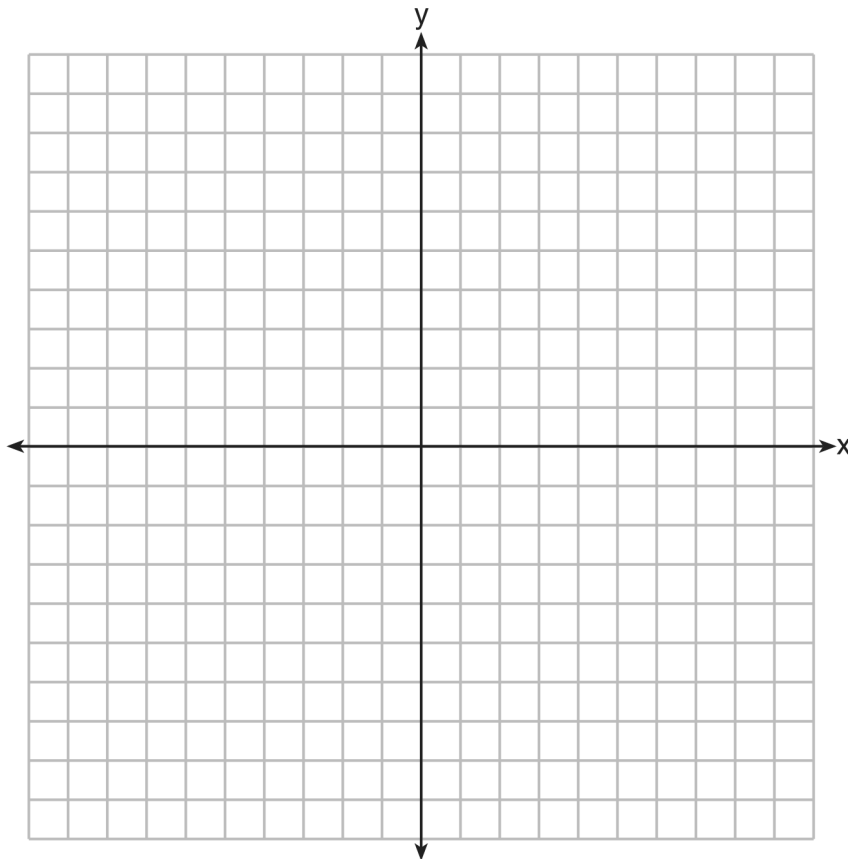
Statements	Reasons
(1) $\triangle ABC$	(1) Given
(2) Through point C , draw \overleftrightarrow{DCE} parallel to \overline{AB} .	(2)
(3) $m\angle 1 = m\angle ACD$, $m\angle 3 = m\angle BCE$	(3)
(4) $m\angle ACD + m\angle 2 + m\angle BCE = 180^\circ$	(4)
(5) $m\angle 1 + m\angle 2 + m\angle 3 = 180^\circ$	(5)

16. Triangle ABC has vertices at $A(-5, 2)$, $B(-4, 7)$, and $C(-2, 7)$, and triangle DEF has vertices at $D(3, 2)$, $E(2, 7)$, and $F(0, 7)$. Graph and label $\triangle ABC$ and $\triangle DEF$ on the set of axes below.

16.

Determine and state the single transformation where $\triangle DEF$ is the image of $\triangle ABC$.

Use your transformation to explain why $\triangle ABC \cong \triangle DEF$.



Score: _____ Geometry-R Thanksgiving Break Packet Period: _____ 11/21/2017

1.
Answer: A
2.
Answer: A
3.
Answer: B
4.
Answer: A
Objective: G-CO.B
5.
Answer: C
6.
Answer: A
7.
Answer: [answer varies]
Objective: G-CO.A
8.
Answer: B
9.
Answer: C
10.
Answer: C
11.
Answer: A
12.
Answer: [graph]
13.
Answer: Yes, and a correct explanation is written
14.
Answer: [answers vary] A complete and correct explanation is written
15.
Answer: All four reasons are correct.
16.
Answer: [construction], [task], [explanation]