Unit 1 End-of-Unit Assessment

Circle the letter of the best answer.

1. If there are two triangles for which $\overline{FH} \cong \overline{MP}$, $\overline{HJ} \cong \overline{PR}$, and $\overline{FJ} \cong \overline{MR}$, which statement is known to be true?

   a. $\triangle FHJ \cong \triangle RMP$

   b. $\triangle FHJ \cong \triangle MPR$

   c. $\triangle FHJ \cong \triangle RPM$

   d. $\triangle FJH \cong \triangle MPR$

2. For $\triangle ABC$ and $\triangle DEF$, the following is given: $\angle A \cong \angle D$, $\angle B \cong \angle E$, and $\overline{AB} \cong \overline{DE}$. By which triangle congruence statement can it be concluded that the triangles are congruent?

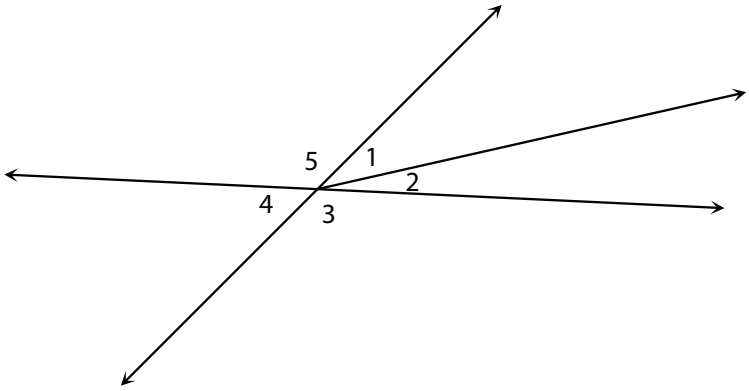
   a. SSS

   b. SAS

   c. ASA

   d. It cannot be determined if the triangles are congruent.

3. If $m\angle 1 = x + 7$, $m\angle 2 = 2(x + 2)$, and $m\angle 4 = 2(x + 13)$ in the diagram below, find $m\angle 4$.



   a. 22°

   b. 34°

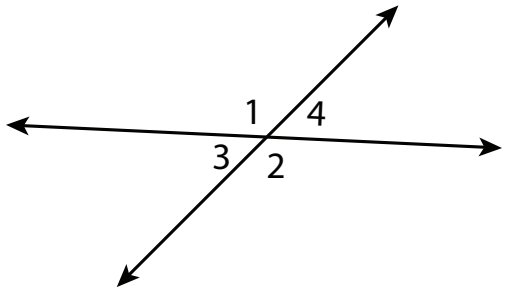
   c. 47°

   d. 56°

continued

4. In the proof of the Vertical Angles Theorem below, what are the reasons for the statements listed? Refer to the diagram given. In the diagram, $\angle 3$ and $\angle 1$ form a linear pair and $\angle 1$ and $\angle 4$ form a linear pair. Prove that $\angle 3 \cong \angle 4$.

Statements	Reasons
1. $\angle 3$ and $\angle 1$ form a linear pair. $\angle 1$ and $\angle 4$ form a linear pair.	1. ?
2. $\angle 3$ and $\angle 1$ are supplementary. $\angle 1$ and $\angle 4$ are supplementary.	2. ?
3. $\angle 3 \cong \angle 4$	3. ?



a.

Statements	Reasons
1. $\angle 3$ and $\angle 1$ form a linear pair. $\angle 1$ and $\angle 4$ form a linear pair.	1. Inspection
2. $\angle 3$ and $\angle 1$ are supplementary. $\angle 1$ and $\angle 4$ are supplementary.	2. Supplement Theorem
3. $\angle 3 \cong \angle 4$	3. Transitive Property

b.

Statements	Reasons
1. $\angle 3$ and $\angle 1$ form a linear pair. $\angle 1$ and $\angle 4$ form a linear pair.	1. Given
2. $\angle 3$ and $\angle 1$ are supplementary. $\angle 1$ and $\angle 4$ are supplementary.	2. Supplement Theorem
3. $\angle 3 \cong \angle 4$	3. Angles supplementary to the same angle or to congruent angles are congruent.

c.

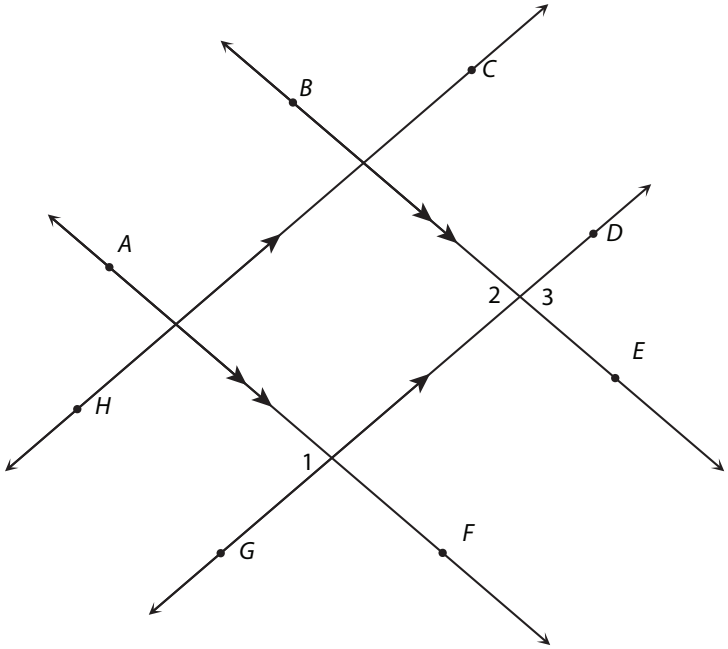
Statements	Reasons
1. $\angle 3$ and $\angle 1$ form a linear pair. $\angle 1$ and $\angle 4$ form a linear pair.	1. Given
2. $\angle 3$ and $\angle 1$ are supplementary. $\angle 1$ and $\angle 4$ are supplementary.	2. $m\angle 3 + m\angle 1 = 180$ $m\angle 1 + m\angle 4 = 180$
3. $\angle 3 \cong \angle 4$	3. Angles supplementary to the same angle or to congruent angles are congruent.

d.

Statements	Reasons
1. $\angle 3$ and $\angle 1$ form a linear pair. $\angle 1$ and $\angle 4$ form a linear pair.	1. Given
2. $\angle 3$ and $\angle 1$ are supplementary. $\angle 1$ and $\angle 4$ are supplementary.	2. Complement Theorem
3. $\angle 3 \cong \angle 4$	3. Angles supplementary to the same angle or to congruent angles are congruent.

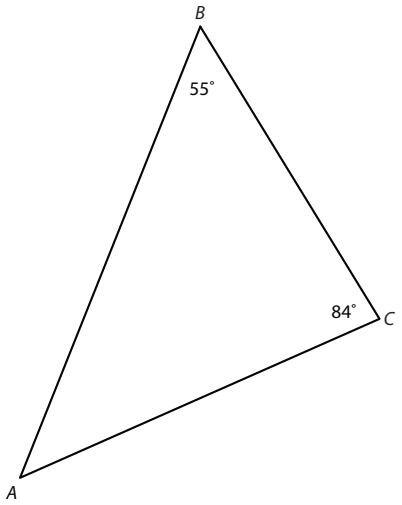
continued

5. There are two sets of parallel lines in the diagram below. Find $m\angle 2$ if $m\angle 1 = 10x - 4$ and $m\angle 3 = 7x + 20$.



a. 14°
b. 90°
c. 76°
d. 104°

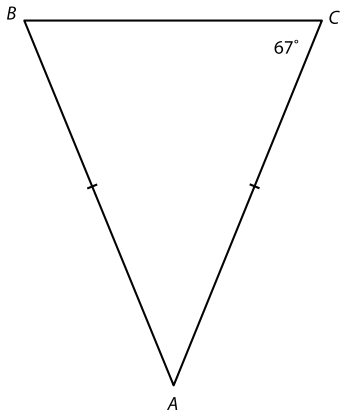
6. What is the measure of $\angle A$?



a. 135°
b. 41°
c. 20.5°
d. 96°

continued

7. What is the measure of $\angle A$?



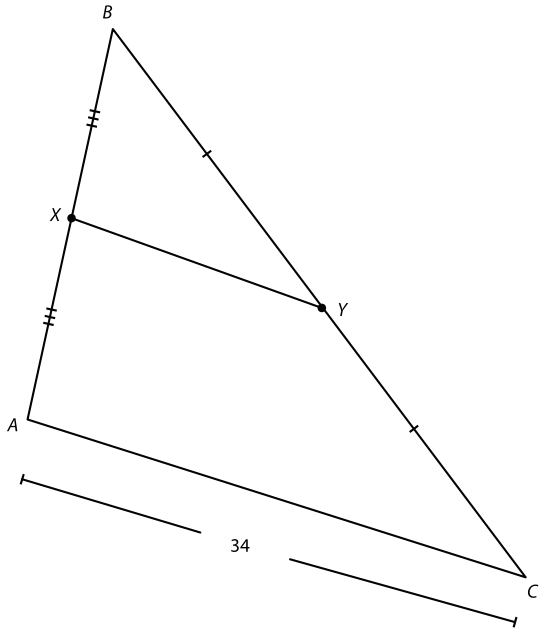
a. 46°

b. 113°

c. 67°

d. 134°

8. If $AC = 34$ units, what is the length of XY?



a. 68 units

b. 17 units

c. 8.5 units

d. 51 units

continued

9. If $f(x, y) = (3x, 2y)$, then what is $f(3, 1)$?

   a. (6, 3)

   b. (9, 2)

   c. (0, 1)

   d. (2, 9)

10. If $f(x, y) = (-x, y)$ and $g(x, y) = (x + 1, -y)$, then what is $f(g(2, 7))$?

    a. (–3, –7)

    b. (7, 3)

    c. (3, 7)

    d. (–7, 3)

11. What type of lines do translations move all points in a set along?

    a. parallel

    b. skew

    c. perpendicular

    d. independent

12. Which set of coordinates below represents a transformation that translates $P(x, y)$ left by 5 units and up by 4 units, then reflects it across the y-axis?

    a. $(x - 5, y + 4)$

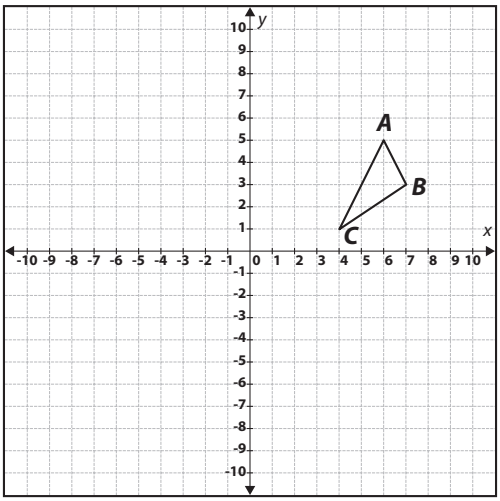
    b. $(x - 5, y - 4)$

    c. $(5 - x, y + 4)$

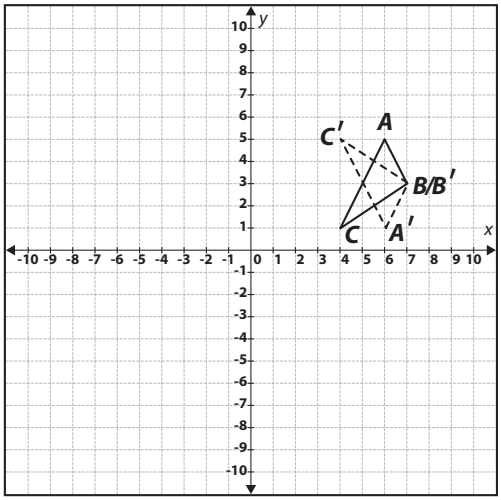
    d. $(5 + x, y + 4)$

continued

13. Which illustration predicts the effect(s) of reflecting the given triangle over the line $x = 3$?



a.



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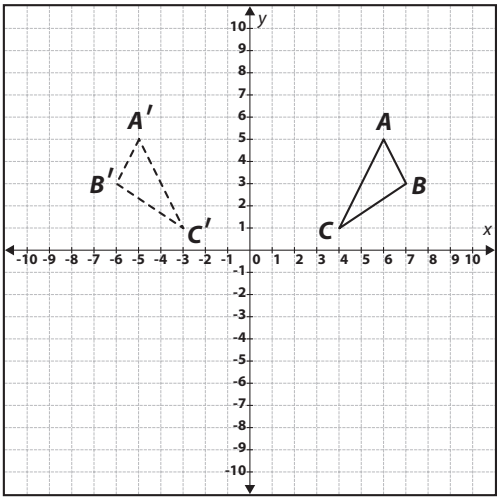
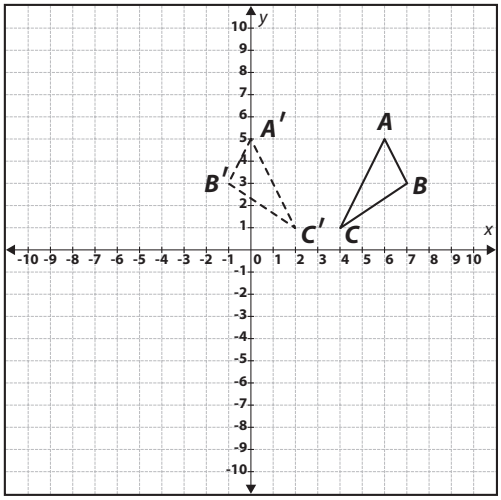
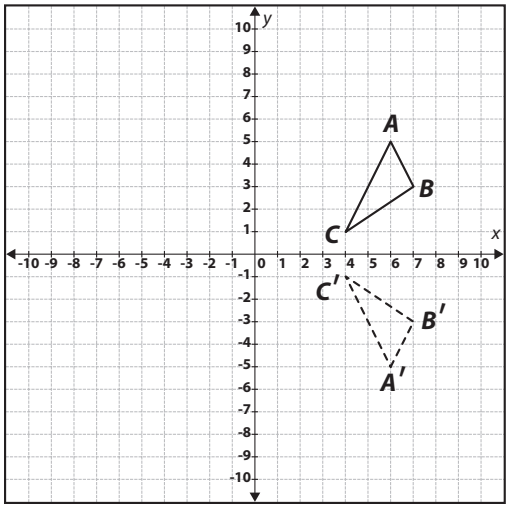


b.



d.



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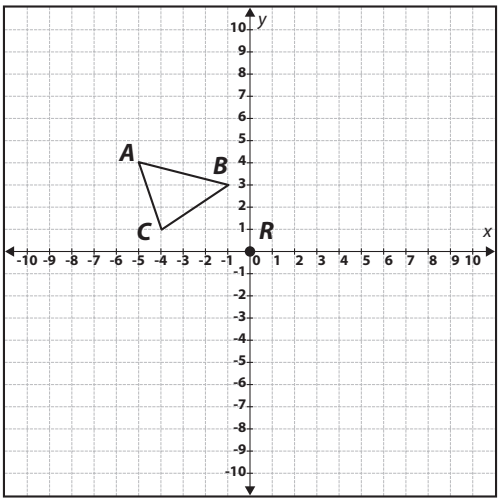
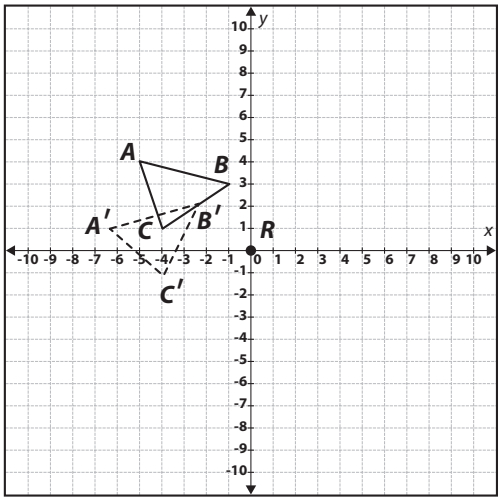
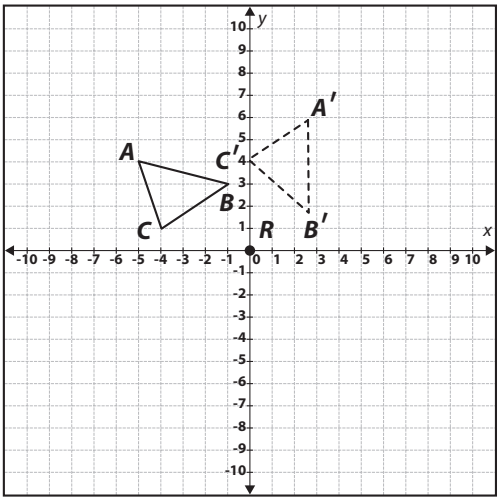
14. Which illustration predicts the effect(s) of rotating the given triangle 75° counterclockwise about *R*?



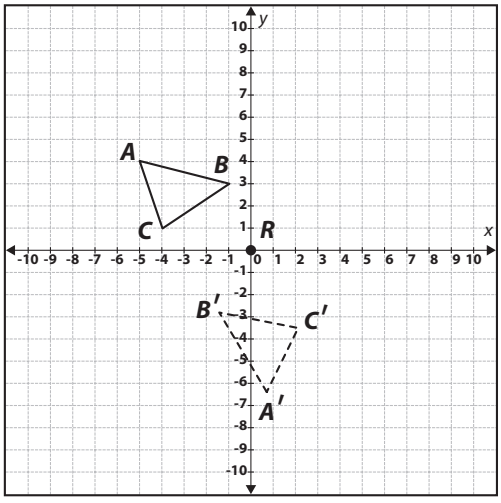
a.



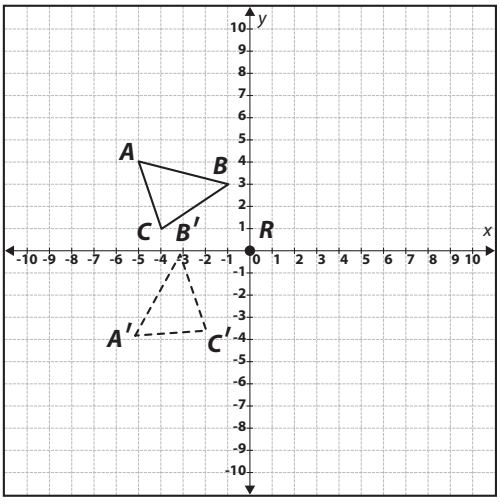
c.



b.



d.



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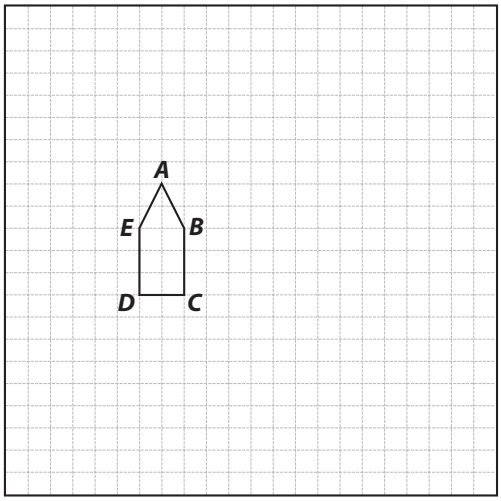
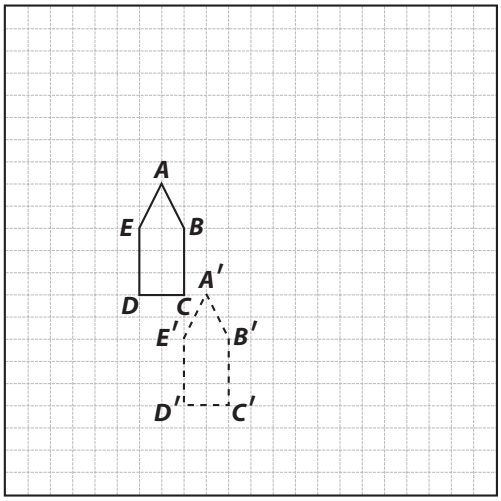
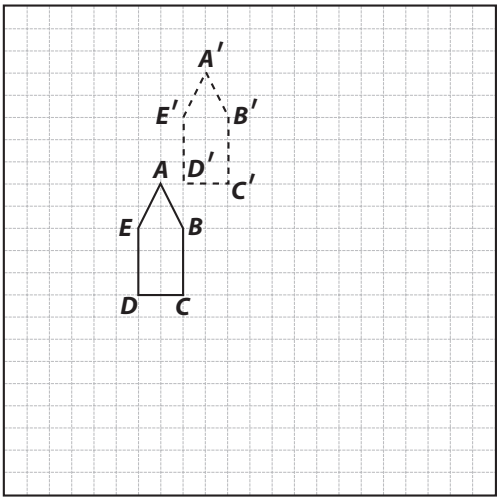
15. Which illustration predicts the effect(s) of translating the given pentagon 2 units to the right and 5 units down? Each square on the grid represents 1 unit.



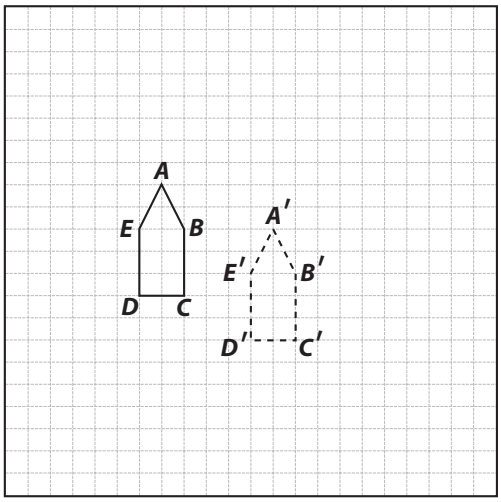
a.



c.



b.



d.