

Unit 5 Review

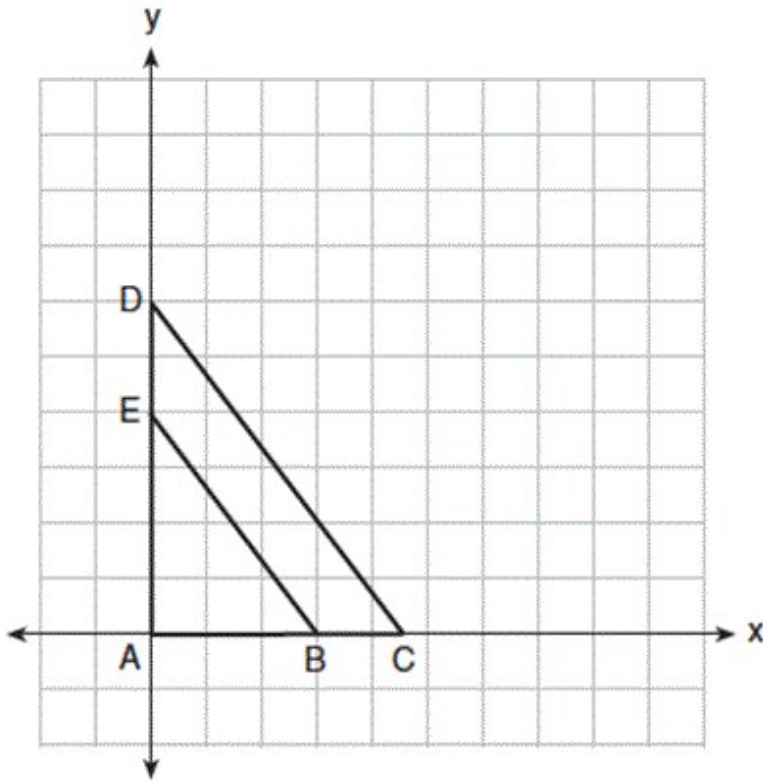
1.

The coordinates of the endpoints of \overline{CD} are $C(3, 8)$ and $D(6, -1)$. Express the length of \overline{CD} in simplest radical form.

2. Point M is the midpoint of \overline{AB} . If the coordinates of M are $(2, 8)$ and the coordinates of A are $(10, 12)$, what are the coordinates of B ?

- A. $(6, 10)$
- B. $(-6, 4)$
- C. $(-8, -4)$
- D. $(18, 16)$

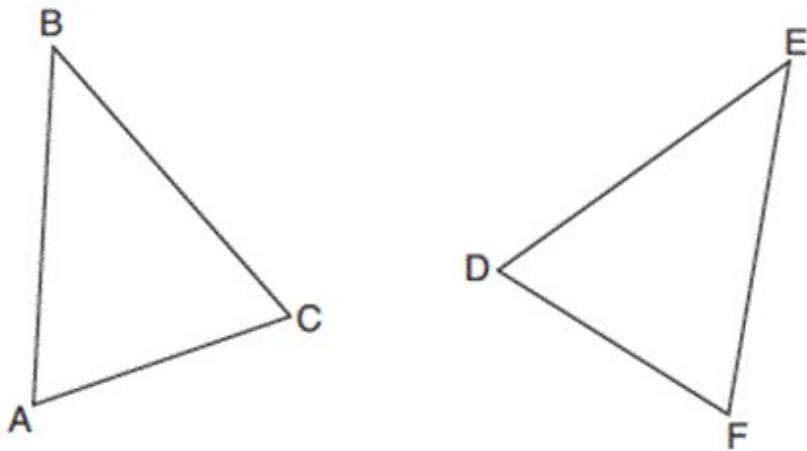
3. In the diagram below, $\triangle ABE$ is the image of $\triangle ACD$ after a dilation centered at the origin. The coordinates of the vertices are $A(0, 0)$, $B(3, 0)$, $C(4.5, 0)$, $D(0, 6)$, and $E(0, 4)$.



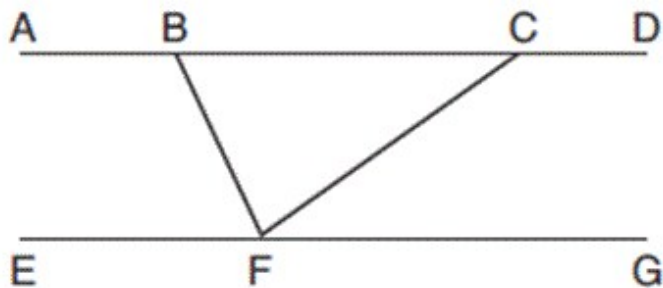
The ratio of the lengths of \overline{BE} to \overline{CD} is

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

4. Which statement is sufficient evidence that $\triangle DEF$ is congruent to $\triangle ABC$?



- A. $AB = DE$ and $BC = EF$
 B. $\angle D \cong \angle A$, $\angle E \cong \angle B$, $\angle F \cong \angle C$
 C. There is a sequence of rigid motions that maps \overline{AB} onto \overline{DE} , \overline{BC} onto \overline{EF} , and \overline{AC} onto \overline{DF} .
 D. There is a sequence of rigid motions that maps point A onto point D , \overline{AB} onto \overline{DE} , $\angle B$ onto $\angle E$.
5. Steve drew line segments $ABCD$, EFG , BF , and CF as shown in the diagram below. Scalene $\triangle BFC$ is formed.



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. $\angle CBF \cong \angle GFC$
6. The center of circle Q has coordinates $(3,-2)$. If circle Q passes through $R(7,1)$, what is the length of its diameter?
- A. 50
 B. 25
 C. 10
 D. 5

7.

Given:

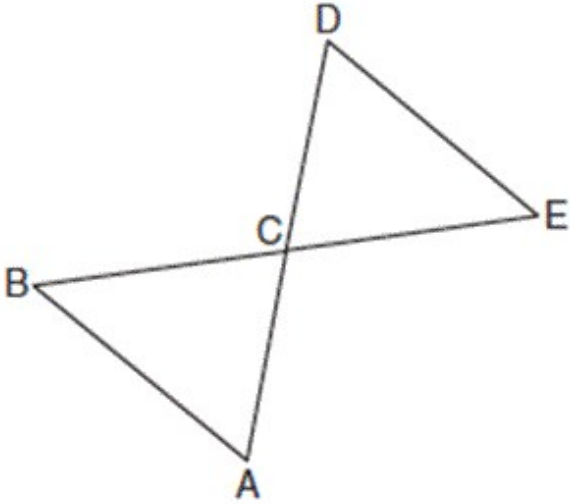
\overline{BE} and \overline{AD} intersect at point C

$\overline{BC} \cong \overline{EC}$

$\overline{AC} \cong \overline{DC}$

\overline{AB} and \overline{DE} are drawn

Prove: $\triangle ABC \cong \triangle DEC$



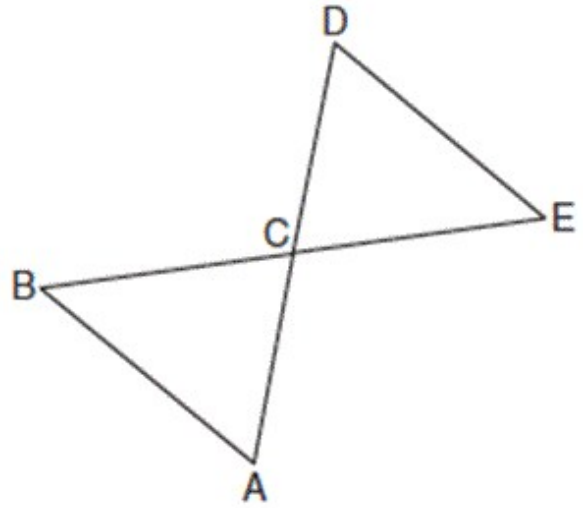
8. Given:

\overline{BE} and \overline{AD} intersect at point C

$\overline{BC} \cong \overline{EC}$

$\overline{AC} \cong \overline{DC}$

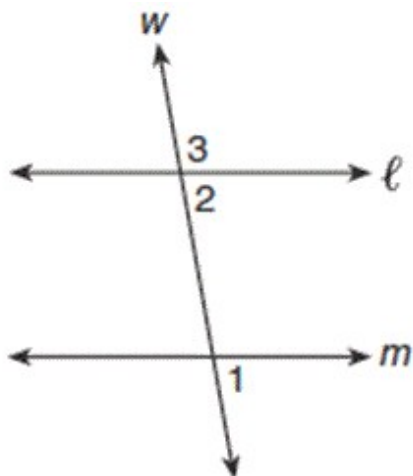
\overline{AB} and \overline{DE} are drawn



Which of the following is the correct way to prove $\triangle ABC \cong \triangle DEC$?

- A. Hypotenuse, Leg
- B. Angle, Side, Angle
- C. Side, Angle, Side
- D. Side, Side, Side

9. In the diagram below, line ℓ is parallel to line m , and line w is a transversal.

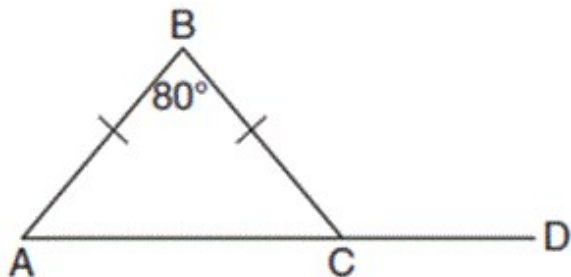


(Not drawn to scale)

If $m\angle 2 = 3x + 17$ and $m\angle 3 = 5x - 21$, what is $m\angle 1$?

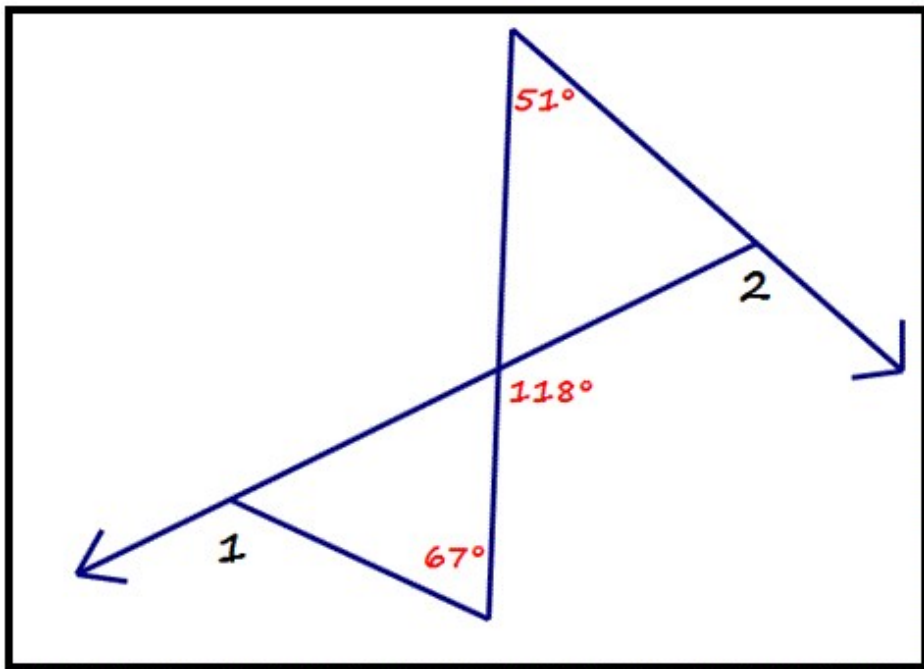
- A. 19
- B. 23
- C. 74
- D. 86

10. In the diagram below of isosceles $\triangle ABC$, the measure of vertex angle B is 80° . If \overline{AC} extends to point D , what is $m\angle BCD$?



- A. 50
- B. 80
- C. 100
- D. 130

11. Use the diagram below to answer the following question.

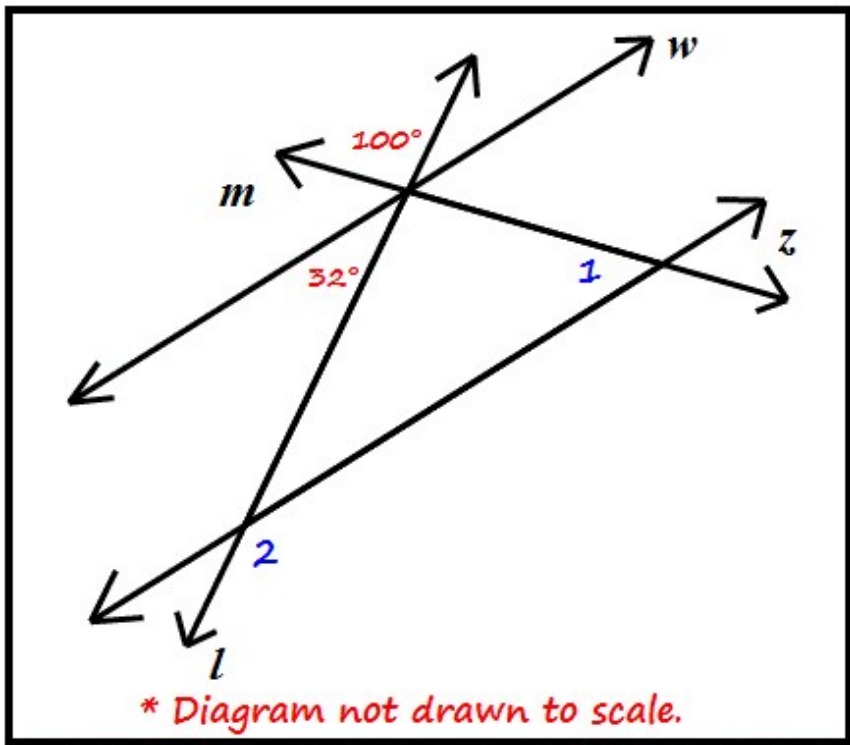


What is the measure of $\angle 2$?

- A. 169°
- B. 134°
- C. 129°
- D. 113°

12. Use the information and the diagram below to answer the following question.

- Lines w and z are cut by transversals l and m .

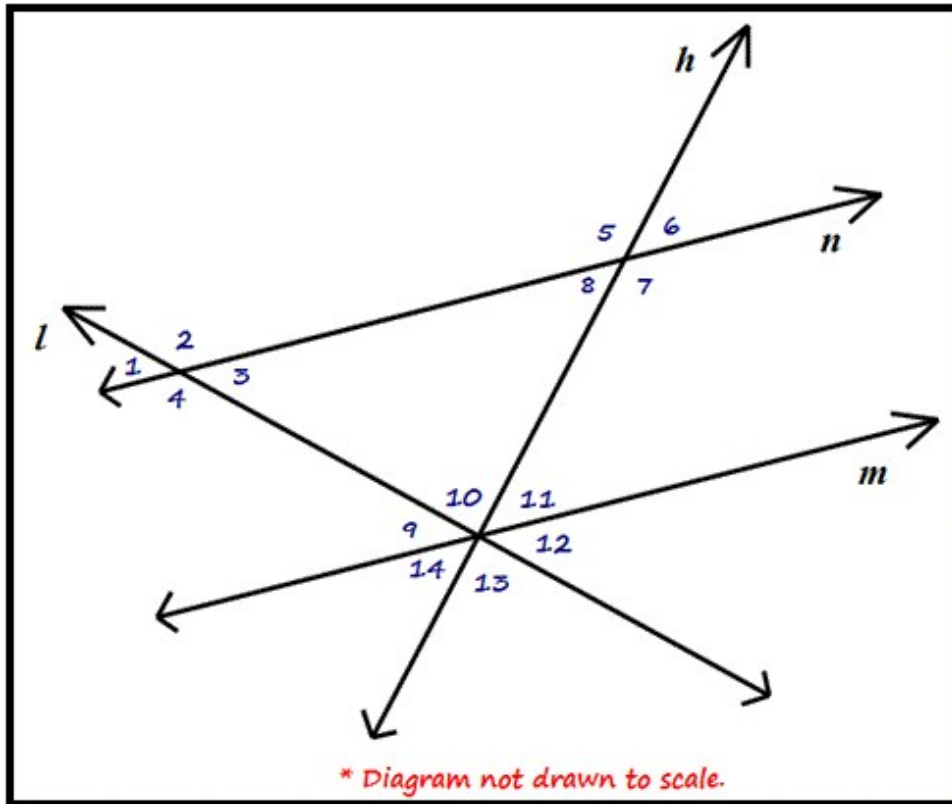


What is the measure of $\angle 2$ that makes lines w and z parallel?

- A. 148°
- B. 132°
- C. 68°
- D. 32°

13. In the diagram below:

- line n is parallel to line m
- $m \angle 5 = 132^\circ$
- $m \angle 9 = 43^\circ$
- lines h and l are transversals

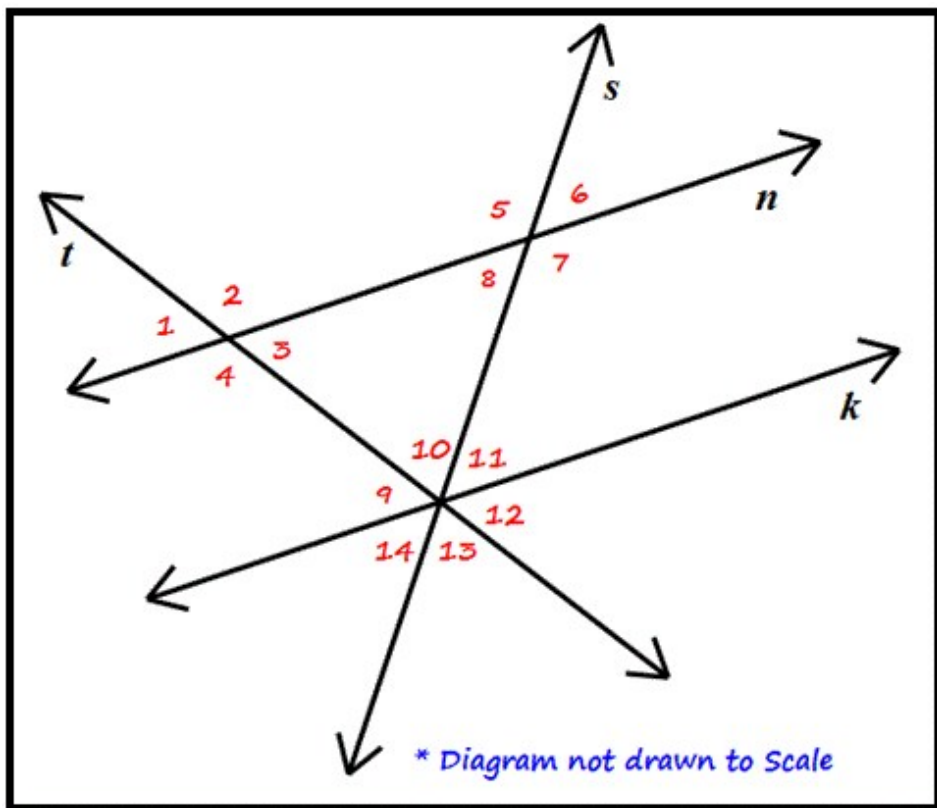


What is the measure of $\angle 11$?

- A. 48°
- B. 43°
- C. 137°
- D. 132°

14. In the diagram below:

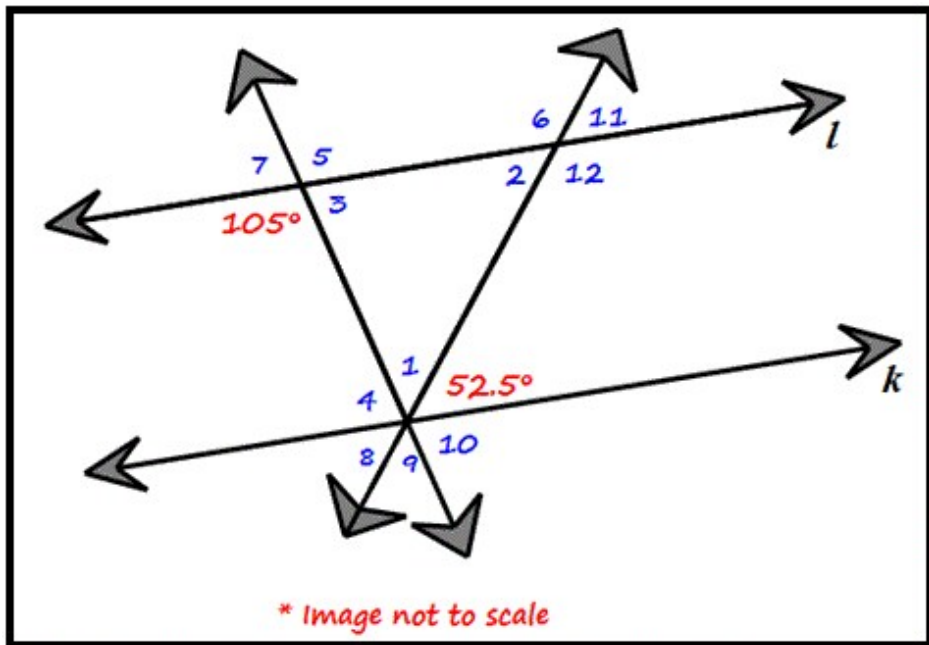
- line n is parallel to line k
- $m\angle 1 = 56^\circ$
- $m\angle 10 = 71^\circ$
- lines s and t are transversals



What is the measure of $\angle 7$?

- A. 127°
- B. 124°
- C. 56°
- D. 53°

15. In the diagram below, line l is parallel to line k .

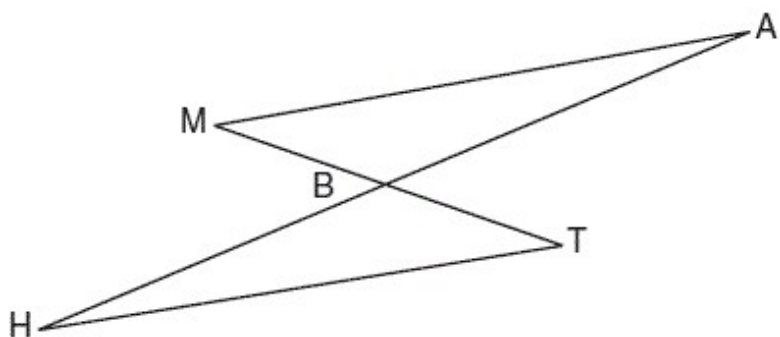


What is the measure of $\angle 1$?

- A. 45°
- B. 52.5°
- C. 75°
- D. 105°

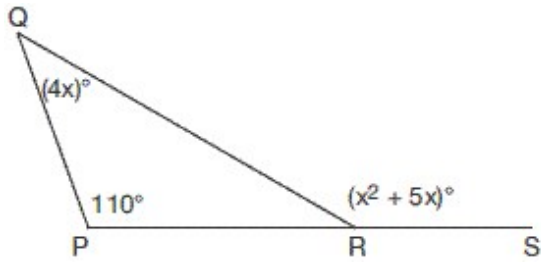
16.

Given: \overline{MT} and \overline{HT} intersect at B , $\overline{MA} \parallel \overline{HT}$, and \overline{MT} bisects \overline{HA}



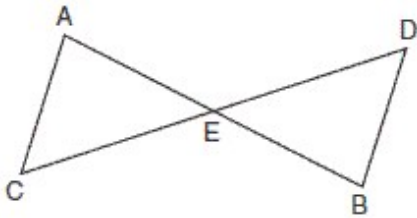
Prove: $\overline{MT} \cong \overline{HT}$

17. In the diagram of $\triangle PQR$ shown below, \overline{PR} is extended to S , $m\angle P = 110$, $m\angle Q = 4x$, and $m\angle QRS = x^2 + 5x$.



What is $m\angle Q$?

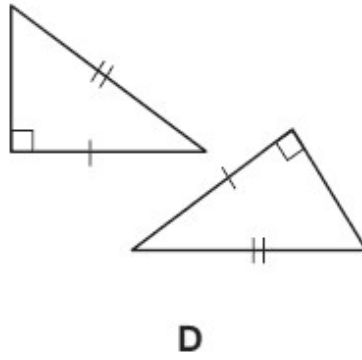
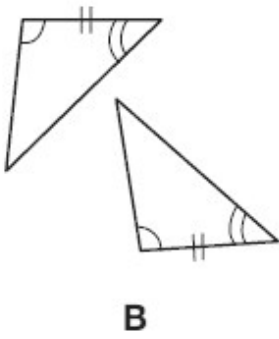
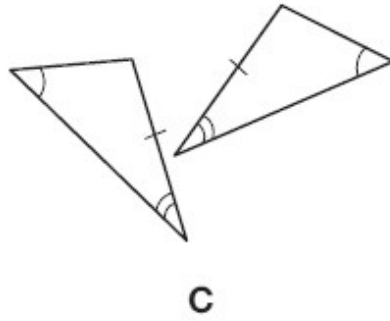
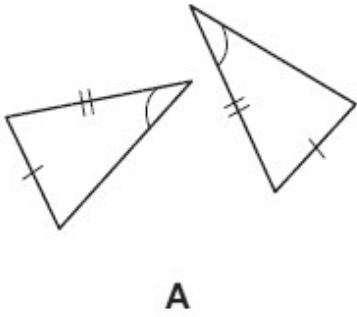
- A. 44
 - B. 40
 - C. 11
 - D. 10
18. In the diagram below, $\triangle AEC \cong \triangle BED$:



Which statement is *not* always true?

- A. $\overline{AC} \cong \overline{BD}$
- B. $\overline{CE} \cong \overline{DE}$
- C. $\angle EAC \cong \angle EBD$
- D. $\angle ACE \cong \angle DBE$

19. In the diagram below, four pairs of triangles are shown. Congruent corresponding parts are labeled in each pair.



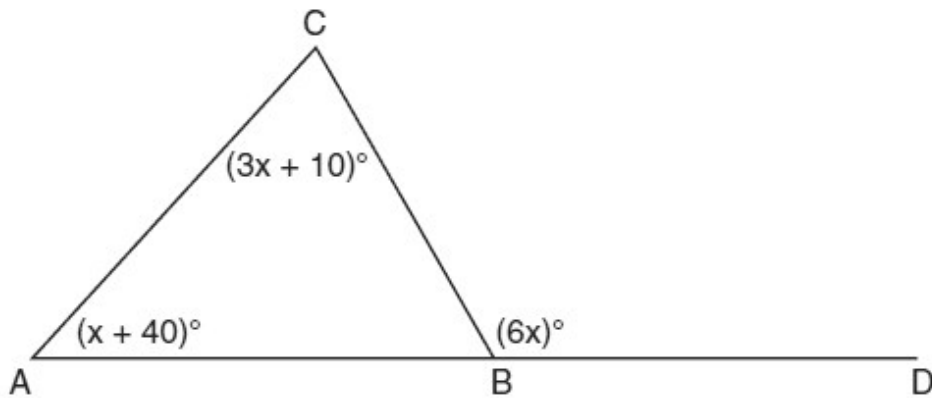
Using only the information given in the diagrams, which pair of triangles can *not* be proven congruent?

- A. *A*
- B. *B*
- C. *C*
- D. *D*

20.

Find, in simplest radical form, the length of the line segment with endpoints whose coordinates are $(-1,4)$ and $(3,-2)$.

21. In the diagram of $\triangle ABC$ below, \overline{AB} is extended to point D .



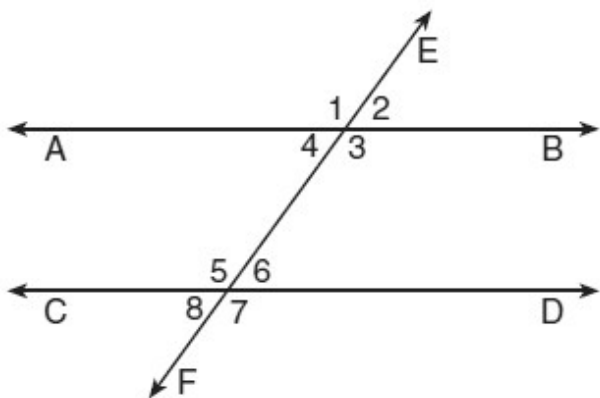
If $m\angle CAB = x + 40$, $m\angle ACB = 3x + 10$, and $m\angle CBD = 6x$, what is $m\angle CAB$?

- A. 13
- B. 25
- C. 53
- D. 65

22. If $\triangle ABC \cong \triangle JKL \cong \triangle RST$, then \overline{BC} must be congruent to

- A. \overline{JL}
- B. \overline{JK}
- C. \overline{ST}
- D. \overline{RS}

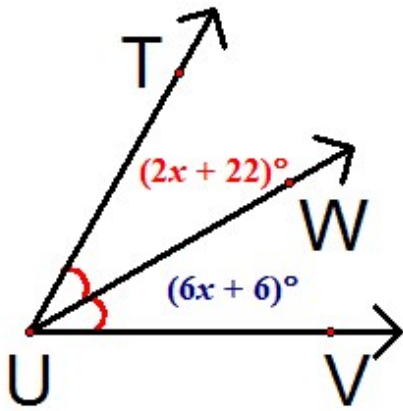
23. Transversal \overleftrightarrow{EF} intersects \overleftrightarrow{AB} and \overleftrightarrow{CD} , as shown in the diagram below.



Which statement could always be used to prove $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$?

- A. $\angle 2 \cong \angle 4$
- B. $\angle 7 \cong \angle 8$
- C. $\angle 3$ and $\angle 6$ are supplementary
- D. $\angle 1$ and $\angle 5$ are supplementary

24. In the diagram below, \overline{UW} bisects $\angle TUV$. Find x , $m\angle TUW$, $m\angle WUV$ and $m\angle TUV$.



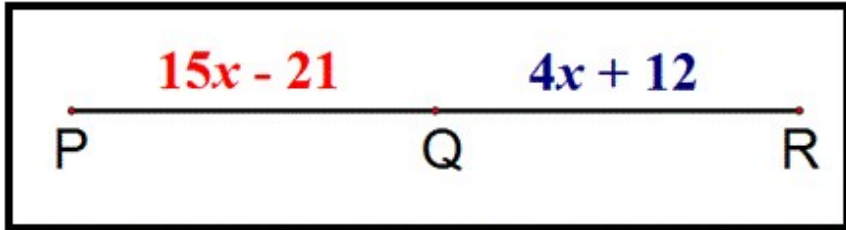
The value of x is .

$m\angle TUW =$

$m\angle WUV =$

$m\angle TUV =$

25. Q is the midpoint of PR . Find PQ , QR and PR .



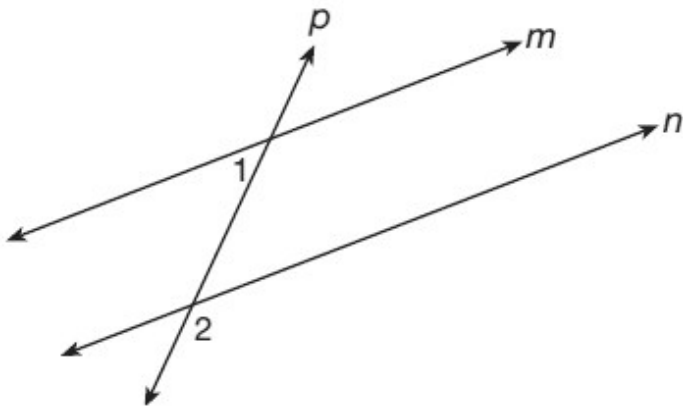
The value of x is .

$PQ =$

$QR =$

$PR =$

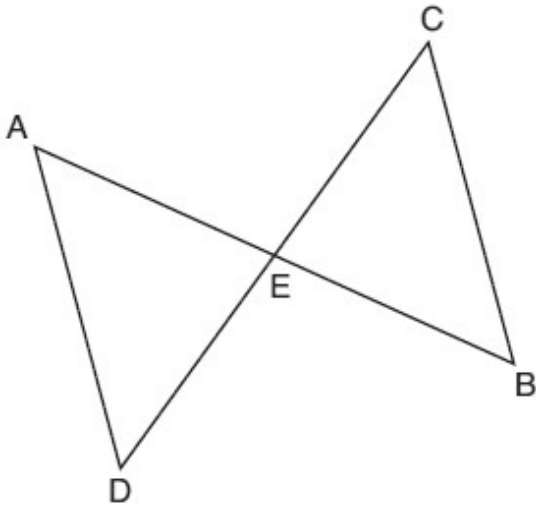
26. As shown in the diagram below, lines m and n are cut by transversal p .



If $m\angle 1 = 4x + 14$ and $m\angle 2 = 8x + 10$, lines m and n are parallel when x equals

- A. 1
- B. 6
- C. 13
- D. 17

27. In the diagram below of $\triangle DAE$ and $\triangle BCE$, \overline{AB} and \overline{CD} intersect at E , such that $\overline{AE} \cong \overline{CE}$ and $\angle BCE \cong \angle DAE$.



Triangle DAE can be proved congruent to triangle BCE by

- A. ASA
- B. SAS
- C. SSS
- D. HL

28. When writing a geometric proof, which angle relationship could be used alone to justify that two angles are congruent?

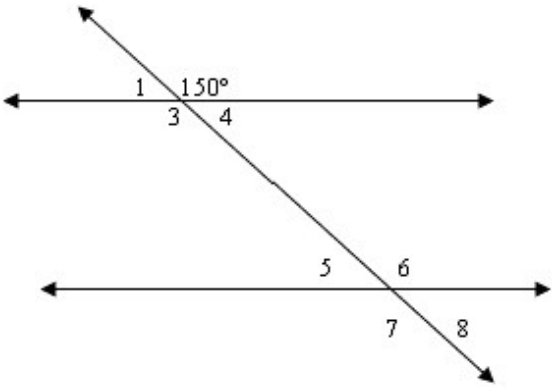
- A. supplementary angles
- B. linear pair of angles
- C. adjacent angles
- D. vertical angles

29. Two angles are complementary. If the measure of one angle is 20° more than the measure of the second angle, what is the number of degrees in the measure of the *smaller* angle?

- A. 35
- B. 55
- C. 80
- D. 100

Figure 1

Two parallel lines are cut by a transversal, forming eight angles as shown in the diagram.



30. [Refer to figure 1]

The measure of $\angle 3 =$

°.

Answer Key for Unit 4 Review

1.

Use the distance formula, □

2. B □

3. A

4. C

5. A

6. C

7.

□

8. C

9. D

10. D

11. D

12. A

13. A

14. A

15. B

16.

Sample Response:

□

<i>Statement</i>	<i>Reasons</i>
1. line segment mt and line segment ht intersect at B , line segment $ma \parallel$ line segment ht , and line segment mt bisects line segment ha	1. Given
2. line segment $hb \cong$ line segment ba	2. A segment bisector divides a segment into two congruent segments.
3. Angles MBA and HBT are vertical angles.	3. Two intersecting lines form vertical angles.
4. $\angle MBA \cong \angle HBT$	4. Opposite vertical angles are congruent.
5. Angle M and T are alternate interior angles.	5. Two parallel lines cut by a transversal create alternate interior angles.
6. $\angle M \cong \angle T$	6. Alternate interior angles are congruent.
7. $\triangle MBA \cong \triangle TBH$	7. $AAS \cong AAS$
8. line segment $mt \cong$ line segment ht	8. $CPCTC$

17. B

18. D

19. A

20.

Use the distance formula.

□

Another way to find the distance is to use the Pythagorean theorem. What is the distance between the x values of the two points? -1 to 3 is 4 . What is the distance between the y values? 4 to -2 is 6 .

□

21. D

22. C

23. C

24. 4, 30, 30, 60

25. 3, 24, 24, 48

26. C

27. A

28. D

29. A

30. 150