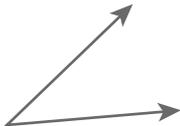
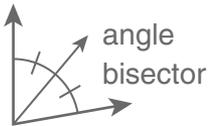
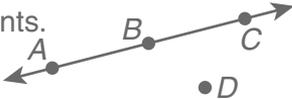
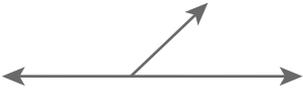
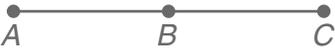




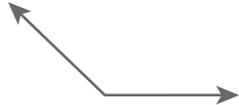
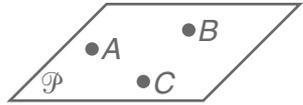
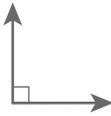
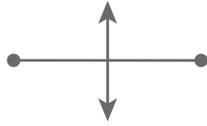
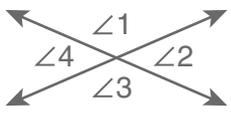
The table contains important vocabulary terms from Chapter 1. As you work through the chapter, fill in the page number, definition, and a clarifying example.

Term	Page	Definition	Clarifying Example
acute angle			
angle			
angle bisector			
collinear			
coplanar			
length			
line			
linear pair			
midpoint			

The table contains important vocabulary terms from Chapter 1. As you work through the chapter, fill in the page number, definition, and a clarifying example.

Term	Page	Definition	Clarifying Example
acute angle	21	An angle that measures greater than 0° and less than 90° .	
angle	20	A figure formed by two rays with a common endpoint.	
angle bisector	23	A ray that divides an angle into two congruent angles	
collinear	6	Points that lie on the same line.	<p>A, B, and C are collinear points.</p> 
coplanar	6	Points that lie in the same plane.	<p>A, B, and C are coplanar points in plane \mathcal{P}.</p> 
length	13	The distance between the two endpoints of a segment.	
line	6	An undefined term in geometry, a line is a straight path that has no thickness and extends forever.	
linear pair	28	A pair of adjacent angles whose noncommon sides are opposite rays.	
midpoint	15	The point that divides a segment into two congruent segments.	

Term	Page	Definition	Clarifying Example
obtuse angle			
plane			
point			
postulate			
ray			
right angle			
segment bisector			
straight angle			
vertical angles			

Term	Page	Definition	Clarifying Example
obtuse angle	21	An angle that measures greater than 90° and less than 180° .	
plane	6	An undefined term in geometry, it is a flat surface that has no thickness and extends forever.	
point	6	An undefined term in geometry, it names a location and has no size.	
postulate	7	A statement that is accepted as true without proof. Also called an axiom.	Postulate 1-1-1: Through any two points there is exactly one line.
ray	7	A part of a line that starts at an endpoint and extends forever in one direction.	
right angle	21	An angle that measures 90° .	
segment bisector	16	A line, ray, or segment that divides a segment into two congruent segments.	
straight angle	21	An angle formed by two opposite rays that measures 180° .	
vertical angles	30	The nonadjacent angles formed by two intersecting lines.	$\angle 1$ and $\angle 3$ are vertical angles. 



1-1 Understanding Points, Lines, and Planes

Draw and label each of the following.

1. a segment containing the points A and B

2. a ray with endpoint M that passes through N

3. a plane containing a line segment with endpoints X and Y

4. three coplanar lines intersecting in one point.

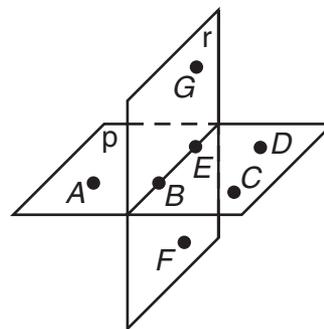
Name each of the following.

5. three coplanar points

6. a line contained in neither plane

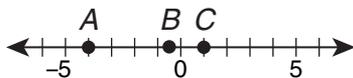
7. a segment contained in plane R

8. a line contained in both planes



1-2 Measuring and Constructing Segments

Find the length of each segment.

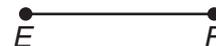


9. \overline{AB}

10. \overline{BC}

11. \overline{AC}

12. Sketch, draw, and construct a segment congruent to \overline{EF} .

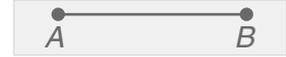




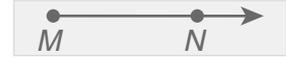
1-1 Understanding Points, Lines, and Planes

Draw and label each of the following.

1. a segment containing the points A and B



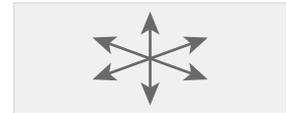
2. a ray with endpoint M that passes through N



3. a plane containing a line segment with endpoints X and Y



4. three coplanar lines intersecting in one point.



Name each of the following.

5. three coplanar points



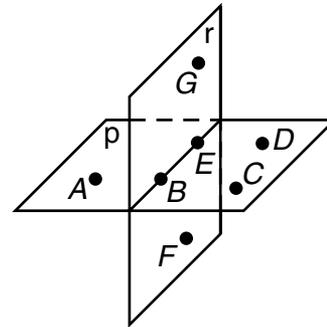
6. a line contained in neither plane



7. a segment contained in plane R

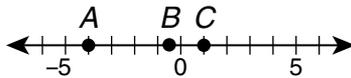


8. a line contained in both planes



1-2 Measuring and Constructing Segments

Find the length of each segment.



9. \overline{AB}



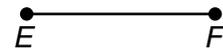
10. \overline{BC}



11. \overline{AC}

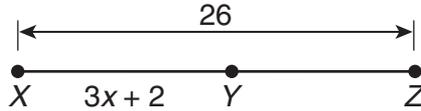


12. Sketch, draw, and construct a segment congruent to \overline{EF} .



13. B is between A and C . $AC = 24$ and $BC = 11$. Find AB .

14. Y is between X and Z .
Find XY .



M is the midpoint of \overline{AB} . $AM = 9x - 6$, and $BM = 6x + 27$.

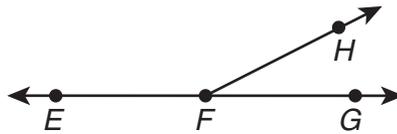
15. Find x .

16. Find AM .

17. Find BM .

1-3 Measuring and Constructing Angles

18. Name all the angles in the diagram.



Classify each angle by its measure.

19. $m\angle XYZ = 89^\circ$

20. $m\angle PQR = 150^\circ$

21. $m\angle BRZ = 90^\circ$

22. \overline{MT} bisects $\angle LMP$, $m\angle LMT = (3x + 12)^\circ$, and $m\angle TMP = (6x - 24)^\circ$. Find $m\angle LMP$.

23. Use a protractor and a straightedge to draw an 80° angle. Then bisect the angle.

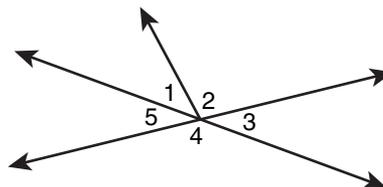


1-4 Pairs of Angles

Tell whether the angles are only adjacent, adjacent and form a linear pair, or not adjacent.

24. $\angle 2$ and $\angle 3$

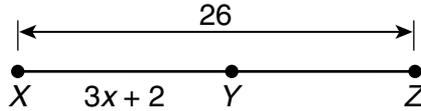
25. $\angle 3$ and $\angle 4$



13. B is between A and C . $AC = 24$ and $BC = 11$. Find AB .

13

14. Y is between X and Z .
Find XY .



14

M is the midpoint of \overline{AB} . $AM = 9x - 6$, and $BM = 6x + 27$.

15. Find x .

11

16. Find AM .

93

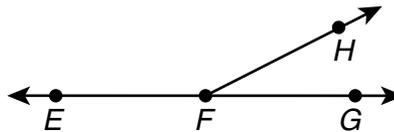
17. Find BM .

93

1-3 Measuring and Constructing Angles

18. Name all the angles in the diagram.

$\angle EFG, \angle EFH, \angle HFG$



Classify each angle by its measure.

19. $m\angle XYZ = 89^\circ$

acute

20. $m\angle PQR = 150^\circ$

obtuse

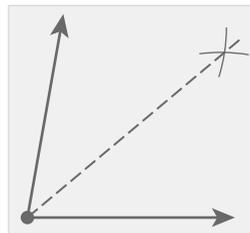
21. $m\angle BRZ = 90^\circ$

right

22. \overline{MT} bisects $\angle LMP$, $m\angle LMT = (3x + 12)^\circ$, and $m\angle TMP = (6x - 24)^\circ$. Find $m\angle LMP$.

96°

23. Use a protractor and a straightedge to draw an 80° angle. Then bisect the angle.



1-4 Pairs of Angles

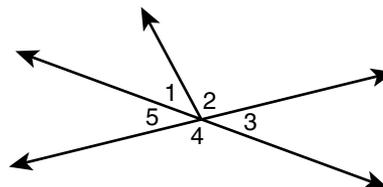
Tell whether the angles are only adjacent, adjacent and form a linear pair, or not adjacent.

24. $\angle 2$ and $\angle 3$

only adjacent

25. $\angle 3$ and $\angle 4$

adjacent and form a linear pair



26. $\angle 3$ and $\angle 1$

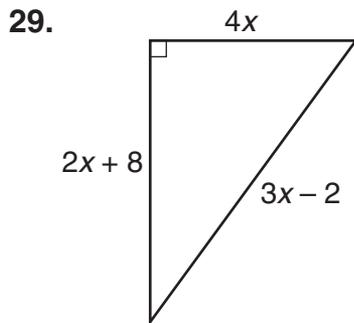
If $m\angle A = (7x - 12)^\circ$, find the measure of each of the following.

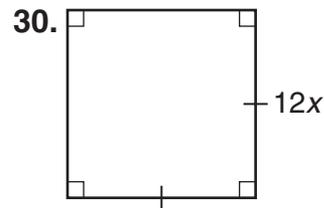
27. supplement of $\angle A$

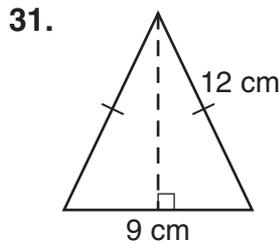
28. complement of $\angle A$

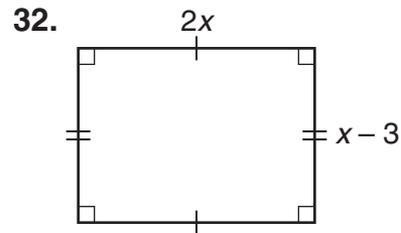
1-5 Using Formulas in Geometry

Find the perimeter and area of each figure.









33. Find the circumference and area of a circle with radius 9 in. Use the π key on your calculator and round to the nearest tenth.

1-6 Midpoint and Distance in the Coordinate Plane

34. Find the coordinates of the midpoint of \overline{AB} with endpoints $A(-2, 6)$, and $B(-4, -1)$.

26. $\angle 3$ and $\angle 1$ **not adjacent**

If $m\angle A = (7x - 12)^\circ$, find the measure of each of the following.

27. supplement of $\angle A$

$192 - 7x$

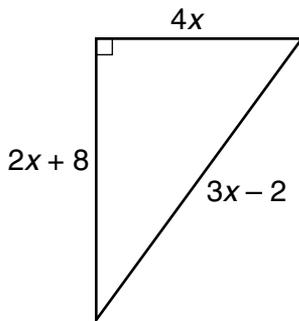
28. complement of $\angle A$

$102 - 7x$

1-5 Using Formulas in Geometry

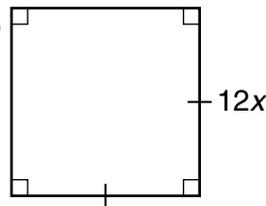
Find the perimeter and area of each figure.

29.



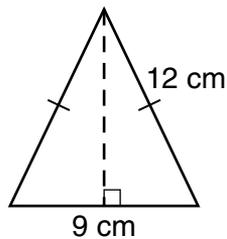
$P = 9x + 6; A = 4x^2 + 16x$

30.



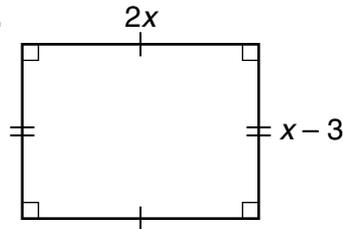
$P = 48x; A = 144x^2$

31.



$P = 33 \text{ cm}; A = 50.06 \text{ cm}^2$

32.



$P = 6x - 6; A = 2x^2 + 6x$

33. Find the circumference and area of a circle with radius 9 in. Use the π key on your calculator and round to the nearest tenth.

$C \approx 56.5 \text{ in.}; A \approx 254.5 \text{ in}^2$

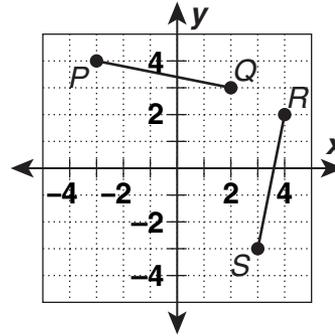
1-6 Midpoint and Distance in the Coordinate Plane

34. Find the coordinates of the midpoint of \overline{AB} with endpoints $A(-2, 6)$, and $B(-4, -1)$.

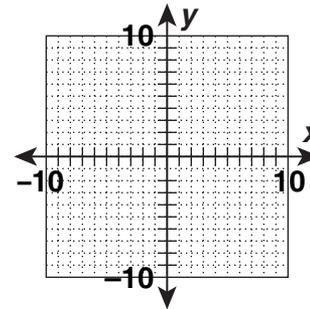
$(-3, 2.5)$

35. S is the midpoint of \overline{RT} , R has coordinates $(-4, -3)$ and S has coordinates $(3, 5)$. Find the coordinates of T .

36. Using the distance formula, find PQ and RS to the nearest tenth. Then determine if $\overline{PQ} \cong \overline{RS}$.

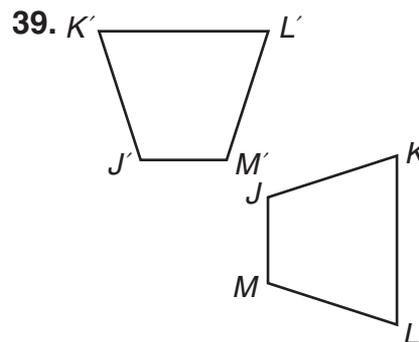
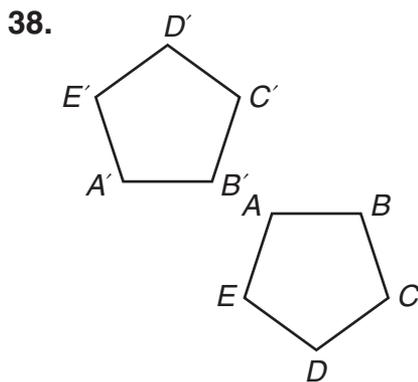


37. Using the Distance Formula and the Pythagorean Theorem, find the distance, to the nearest tenth, from $M(4, -3)$ to $N(-5, 2)$.



1-7 Transformations in the Coordinate Plane

Identify the transformation. Then use arrow notation to describe the transformation.

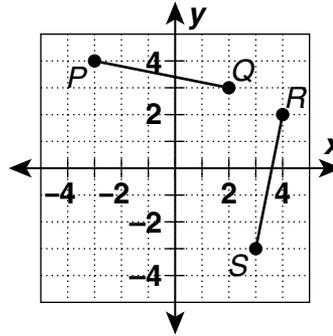


35. S is the midpoint of \overline{RT} , R has coordinates $(-4, -3)$ and S has coordinates $(3, 5)$. Find the coordinates of T .

(10, 13)

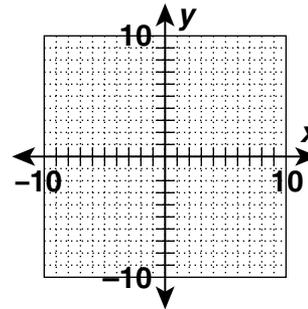
36. Using the distance formula, find PQ and RS to the nearest tenth. Then determine if $\overline{PQ} \cong \overline{RS}$.

$\sqrt{26} \approx 5.1$; yes; $\overline{PQ} \cong \overline{RS}$



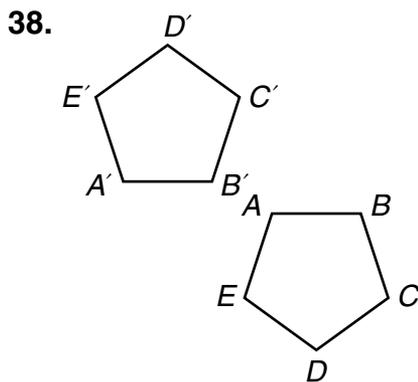
37. Using the Distance Formula and the Pythagorean Theorem, find the distance, to the nearest tenth, from $M(4, -3)$ to $N(-5, 2)$.

$\sqrt{106} \approx 10.3$

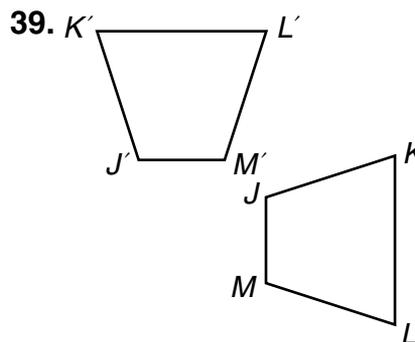


1-7 Transformations in the Coordinate Plane

Identify the transformation. Then use arrow notation to describe the transformation.

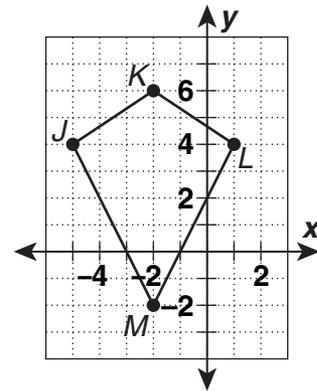
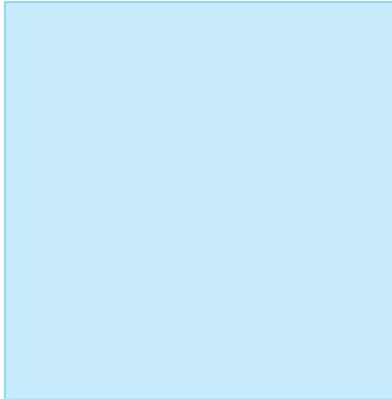


reflection: $ABCDE \rightarrow A'B'C'D'E'$

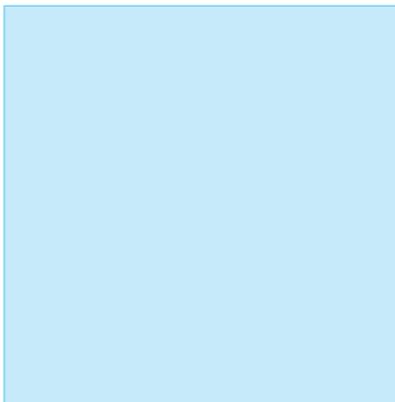


rotation 90° ; $JKLM \rightarrow J'K'L'M'$

40. Find the coordinates for the image of figure $JKLM$ after the translation $(x, y) \rightarrow (x - 1, y + 2)$. Graph the image.

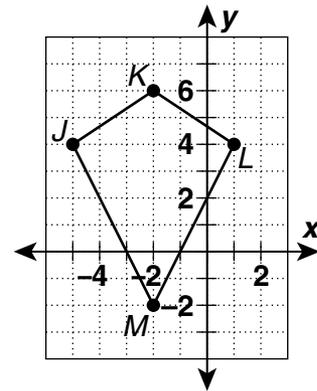
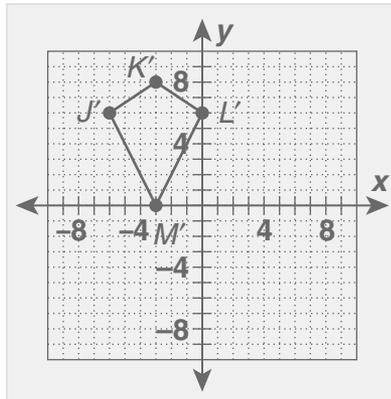


41. A figure has vertices at $A(2, 4)$, $B(-5, 1)$ and $C(0, -3)$. After a transformation, the image of the figure has vertices at $A'(5, 6)$, $B'(-2, 3)$, and $C'(3, -1)$. Graph the preimage and image. Then, identify the transformation.

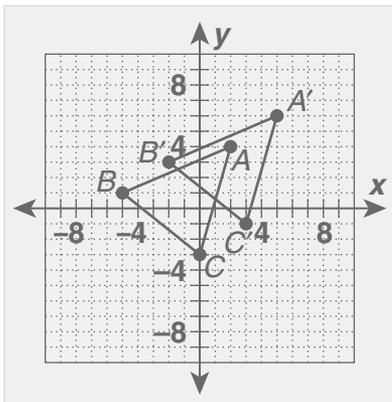


40. Find the coordinates for the image of figure $JKLM$ after the translation $(x, y) \rightarrow (x - 1, y + 2)$. Graph the image.

$J'(-6, 6)$,
 $K'(-3, 8)$, $L'(0, 6)$,
 $M'(-3, 0)$



41. A figure has vertices at $A(2, 4)$, $B(-5, 1)$ and $C(0, -3)$. After a transformation, the image of the figure has vertices at $A'(5, 6)$, $B'(-2, 3)$, and $C'(3, -1)$. Graph the preimage and image. Then, identify the transformation.



Transformation: $(x, y) \rightarrow$
 $(x + 3, y + 2)$

- Postulate 1-1-1** Through any two points there is exactly one line.
- Postulate 1-1-2** Through any three noncollinear points there is exactly one plane containing them.
- Postulate 1-1-3** If two points lie in a plane, then the line containing those points lies in the plane.
- Postulate 1-1-4** If two lines intersect, then they intersect in exactly one point.
- Postulate 1-1-5** If two planes intersect, then they intersect in exactly one line.
- Postulate 1-2-1** (Ruler Postulate) The points on a line can be put into a one-to-one correspondence with the real numbers.
- Postulate 1-2-2** (Segment Addition Postulate) If B is between A and C , then $AB + BC = AC$.
- Postulate 1-3-1** (Protractor Postulate) Given \overleftrightarrow{AB} and a point O on \overleftrightarrow{AB} , all rays that can be drawn from O can be put into a one-to-one correspondence with the real numbers from 0 to 180.
- Postulate 1-3-2** (Angle Addition Postulate) If S is in the interior of $\angle PQR$, then $m\angle PQS + m\angle SQR = m\angle PQR$.

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- Postulate 1-3-2** (Angle Addition Postulate) If S is in the interior of $\angle PQR$, then $m\angle PQS + m\angle SQR = m\angle PQR$.



Answer these questions to summarize the important concepts from Chapter 1 in your own words.

1. What are the building blocks of geometric figures?

2. How are angles classified? Give an example of each.

3. How are the Distance formula and the Pythagorean Theorem related to one another?

4. What the different types of transformations?

For more review of Chapter 1:

- Complete the Chapter 1 Study Guide and Review on pages 60–63 of your textbook.
- Complete the Ready to Go On quizzes on pages 35 and 59 of your textbook.

Answer these questions to summarize the important concepts from Chapter 1 in your own words.

1. What are the building blocks of geometric figures?

The building blocks of geometric figures are points, lines, planes, and angles.

2. How are angles classified? Give an example of each.

Angles are classified according to their angle measure. An acute angle measures less than 90 degrees, an obtuse angle measures more than 90 degrees and less than 180 degrees, a straight angle measures exactly 180 degrees, and a right angle measures exactly 90 degrees.

3. How are the Distance formula and the Pythagorean Theorem related to one another?

The Pythagorean and Distance Formula can both be used to find distances in a plane. If you find the distance between two points using both methods you will get the same answer.

4. What the different types of transformations?

There are three types of transformations. A reflection (or flip) is a transformation across a line, called the line of reflection. A rotation (or turn) is a transformation about a point P called the center of rotation, so that each point and its image are the same distance from P. A translation (or slide) moves all the points of a figure the same distance in the same direction.

For more review of Chapter 1:

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