Chapters 1–3 • Exam **Form A**

Name _____ **Period** _____ **Date** _____

Part A

Identify each statement as true or false.

1. The three undefined terms in geometry are point, line, and angle.

2. In a linear pair of angles, one of the angles must be obtuse.

3. A trapezoid has exactly one pair of congruent sides.

4. The semicircle has an arc measure of 360°.

5. A scalene triangle has no sides of the same length.

6. If a point is on the bisector of an angle, then it is equidistant from the sides of the angle.

7. Only one plane can pass through one line and a point that is not on the line.

8. A square is both a rhombus and a rectangle.

9. The centroid of a triangle is the center of gravity for the triangle.

10. The process of observing data, recognizing patterns, and making generalizations about those patterns is known as deductive reasoning.

11. $\angle ABC$ has vertex C.

12. If two lines are cut by a transversal to form a pair of congruent corresponding angles, then the lines are parallel.

13. When you construct a figure, you use only a compass and a protractor.

14. The tangent to a circle is a special type of chord.

15. The incenter of a triangle is the intersection of the perpendicular bisectors of its sides.

Part B

Complete each statement.

1.   A(n) _____ triangle has angle measures that are all less than 90°.

2.   A(n) _____ is a chord that passes through the center of a circle.

3.   If $\angle 1$ and $\angle 2$ form a linear pair and $m\angle 1 = 64°$, then $m\angle 2 =$ _____.

4.   The _____ of a triangle is the center of the circle inscribed in the triangle.

5.   Each point on the _____ of a segment is equidistant from the endpoints of the segment.

6.   A translation of $\langle 6, -4 \rangle$ followed by a translation of $\langle -3, -5 \rangle$ is equivalent to a translation of _____.

7.   The line of reflection is the _____ of every segment joining a point in the original figure with its image.

8.   The ordered pair rule $(x, y) \rightarrow$ _____ represents a reflection over the x-axis.

Part C

Lines ℓ and m are parallel. Find each lettered angle measure.

1. $a =$ _____

2. $b =$ _____

3. $c =$ _____

4. $d =$ _____

5. $e =$ _____

6. $f =$ _____

7. $g =$ _____

8. $h =$ _____
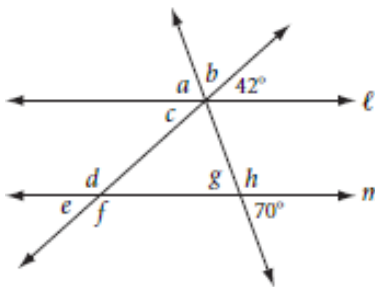
Part D

In Problems 1 and 2, find the missing term of each sequence.

1. 1, 4, 9, 16, 25, _____, …

2. 10, 9, 7, 4, 0, –5, _____, …

In Problems 3 and 4, find the value of the nth term in each sequence.

3.

Term	1	2	3	4	5	6	7	...	n
Value	–5	–2	1	4	7	10	13	...	

4.

Term	1	2	3	4	5	6	7	...	n
Value	6	–5	–16	–27	–38	–49	–60	...	

5. How many diagonals does a polygon with 32 sides have?
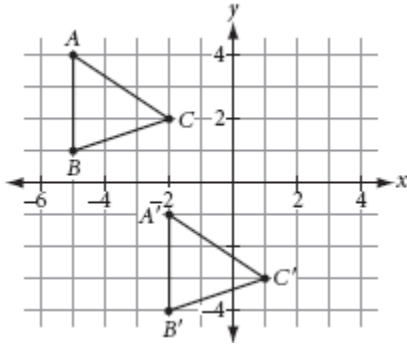
Part E

Perform the following constructions.

1. Draw a segment *PQ,* and then construct its perpendicular bisector.

2. Construct $\triangle XYZ$ so that $m\angle X = 90°$ and $m\angle Y = 45°$.

3. Copy $\triangle ABC$ (with a compass and straightedge), and then construct and label its centroid.

4. Draw $\overleftrightarrow{RS}$, and then construct a line parallel to $\overleftrightarrow{RS}$.
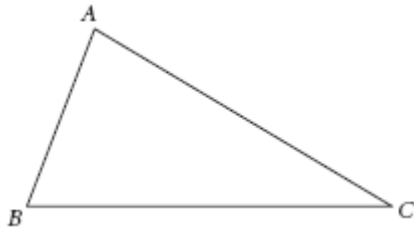
For Problems 5 and 6, complete the ordered pair rule that transforms $\triangle ABC$ into its image, $\triangle A'B'C'$.

5. $(x, y) \rightarrow$ _____

6. $(x, y) \rightarrow$ _____