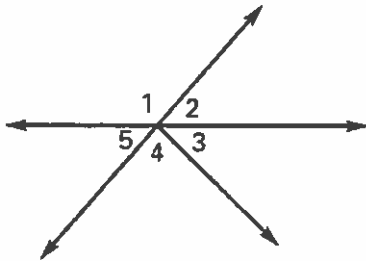


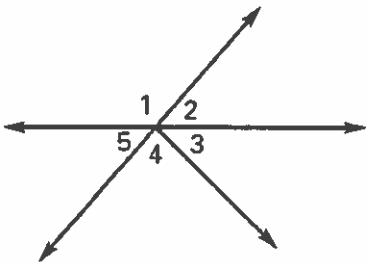
**Geometry and Advanced Geometry Chapter 1 Test****Short Answer**

1. The midpoint of  $\overline{JK}$  is  $M(-2, -2)$ . One endpoint is  $J(4, 3)$ . Find the coordinates of the other endpoint.

2. Tell whether  $\angle 1$  and  $\angle 2$  are *vertical angles*, a *linear pair*, or *neither*.

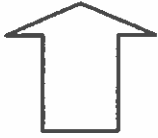


3. Tell whether  $\angle 2$  and  $\angle 5$  are *vertical angles*, a *linear pair*, or *neither*.

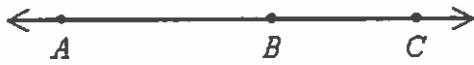


4.  $\angle 1$  and  $\angle 2$  form a linear pair.  $m\angle 1 = 73^\circ$ . Find  $m\angle 2$ .

5. Classify the polygon by the number of sides. Is it convex or concave?

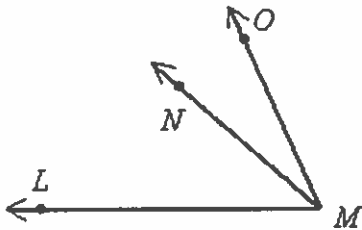


6. If  $AB = 19$  and  $AC = 32$ , find the length of  $\overline{BC}$ .



7. Find the coordinates of the midpoint of the segment with the endpoints  $A(-1, 4)$  and  $B(3, 6)$ .

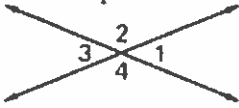
8.  $m\angle OMN = (2x + 9)^\circ$  and  $m\angle LMN = (6x - 7)^\circ$  and  $m\angle OML = 66^\circ$ .  
Find  $m\angle OMN$  and  $m\angle LMN$ .



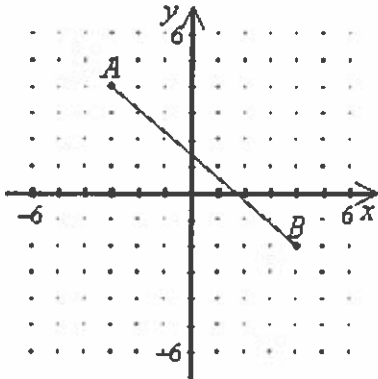
Name: \_\_\_\_\_

ID: A

9. Name a pair of vertical angles in the figure.



10. The distance between points  $A$  and  $B$  is \_\_\_\_\_.



11. Let  $C$  be between  $D$  and  $E$ . Use the Segment Addition Postulate to solve for  $v$ .

$$DC = 3v - 30$$

$$CE = 6v - 15$$

$$DE = 27$$

Name: \_\_\_\_\_

ID: A

12. Find the length of  $LN$ .

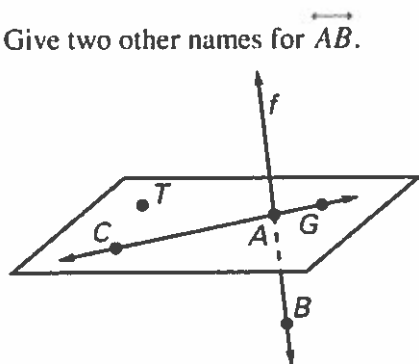


13. Find the length of  $YZ$ .



14. Find the exact distance between the points.  
 $A(2, 3)$  and  $B(4, 9)$

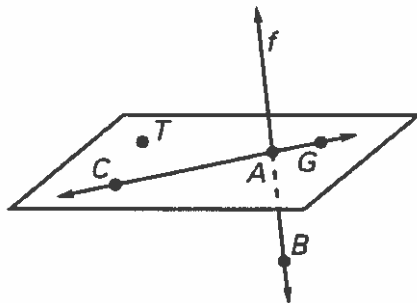
15. Give two other names for  $\overleftrightarrow{AB}$ .



Name: \_\_\_\_\_

ID: A

16. Sketch the intersection of a line and a plane.

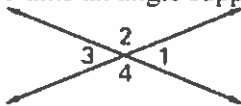


17. Name three points that are collinear.

18. Define complementary angles.

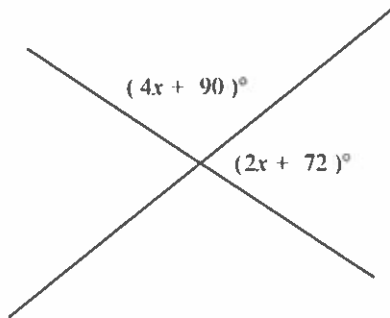
19.  $\angle 1$  and  $\angle 2$  are complementary angles. Given  $m\angle 1 = 87^\circ$ , find  $m\angle 2$ .

20. Name an angle supplementary to  $\angle 2$  in the figure.



21.  $\angle 1$  and  $\angle 2$  are supplementary angles. Given  $m\angle 1 = 8^\circ$ , find  $m\angle 2$ .

22. Solve for  $x$ :



23. If  $AB = 17$  and  $AC = 22$ , find  $BC$ .

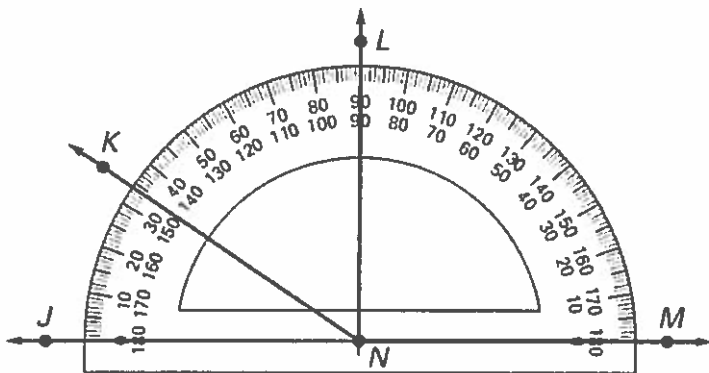


24. The expressions  $5x - 4$  and  $3x$  represent two side lengths (in meters) of a regular octagon. Find the length of a side of the octagon.

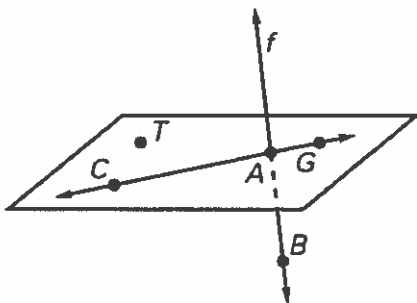
Name: \_\_\_\_\_

ID: A

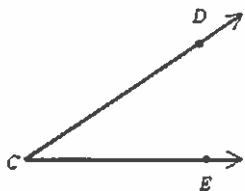
25. Use the diagram to find the measure of  $\angle JNK$ . Then classify the angle.



26. Name a point not coplanar with A, C, and T.



27. Name this angle in three different ways.



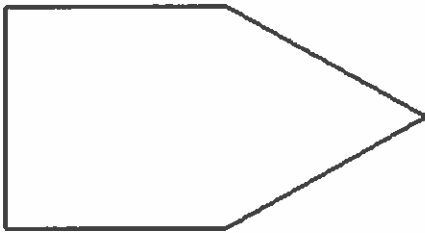
Name: \_\_\_\_\_

ID: A

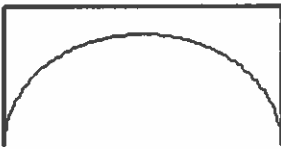
28. (BONUS) The positions of two airplanes approaching an airport are plotted in a coordinate plane with the airport located at  $(0, 0)$ . The locations of the planes are given by the coordinates  $(-3, 3)$  and  $(-5, 5)$ . Each grid square is 1 mile wide. How far apart are the approaching airplanes? Round your answer to the nearest tenth of a mile.

**Other**

29. Determine if the figure below is a regular polygon. If it is not a regular polygon, explain why.



30. Determine if the figure below is a polygon. If it is not a polygon, explain why.



**Completion**

*Complete each statement.*

31. Complete the statement. A regular polygon is both \_\_\_\_\_ and equiangular.



## Geometry and Advanced Geometry Chapter 1 Test Answer Section

### SHORT ANSWER

1. ANS:  
(-8, -7)

PTS: 1                    DIF: Level B            REF: MLGE0086  
 LOC: NCTM.PSSM.00.MTH.9-12.GEO.2.a  
 TOP: Lesson 1.3 Use Midpoint and Distance Formulas            KEY: midpoint formula  
 MSC: DOK 3            NOT: 978-0-547-31534-8

2. ANS:  
linear pair

PTS: 1                    DIF: Level A            TOP: Chapter 1 Test, Form A  
 MSC: DOK 1

3. ANS:  
vertical angles

PTS: 1                    DIF: Level A            TOP: Chapter 1 Test, Form A  
 MSC: DOK 1

4. ANS:  
107°

PTS: 1                    DIF: Level B            REF: MGEH0011  
 TOP: Lesson 1.5 Describe Angle Pair Relationships            KEY: supplementary | linear pair  
 MSC: DOK 1            NOT: 978-0-547-31534-8

5. ANS:  
concave

PTS: 1                    DIF: Level A            TOP: Chapter 1 Test, Form A  
 MSC: DOK 1

6. ANS:  
13

PTS: 1                    DIF: Level B            REF: PHGM0108  
 TOP: Lesson 1.2 Use Segments and Congruence  
 KEY: segment length | segment addition postulate            MSC: DOK 2  
 NOT: 978-0-547-31534-8

7. ANS:  
(1, 5)

PTS: 1                    DIF: Level A            TOP: Chapter 1 Test, Form A  
 MSC: DOK 2

8. ANS:

$$m\angle OMN = 25^\circ \text{ and } m\angle LMN = 41^\circ$$

PTS: 1                    DIF: Level C                    REF: MLGE0191                    NAT: NT.CCSS.MTH.10.9-12.G.CO.1  
 LOC: NCTM.PSSM.00.MTH.9-12.PRS.3 | NCTM.PSSM.00.MTH.9-12.REP.2  
 TOP: Lesson 1.4 Measure and Classify Angles  
 KEY: angle addition postulate | angle measure                    MSC: DOK 3  
 NOT: 978-0-547-31534-8

9. ANS:

 $\angle 1 \text{ and } \angle 3 \text{ or } \angle 2 \text{ and } \angle 4$ 

PTS: 1                    DIF: Level A                    REF: MIM10111                    NAT: NT.CCSS.MTH.10.9-12.G.CO.1  
 TOP: Lesson 1.5 Describe Angle Pair Relationships                    KEY: vertical angles  
 MSC: DOK 1                    NOT: 978-0-547-31534-8

10. ANS:

$$\sqrt{85}$$

PTS: 1                    DIF: Level B                    REF: MLGE0188  
 TOP: Lesson 1.3 Use Midpoint and Distance Formulas  
 KEY: distance formula | coordinate geometry                    MSC: DOK 2  
 NOT: 978-0-547-31534-8

11. ANS:

$$v = 8$$

PTS: 1                    DIF: Level B                    REF: MHGM0013  
 TOP: Lesson 1.2 Use Segments and Congruence  
 KEY: solve | variable | segment addition postulate                    MSC: DOK 2  
 NOT: 978-0-547-31534-8

12. ANS:

37

PTS: 1                    DIF: Level A                    TOP: Chapter 1 Test, Form A  
 MSC: DOK 1

13. ANS:

18

PTS: 1                    DIF: Level A                    TOP: Chapter 1 Test, Form A  
 MSC: DOK 1

14. ANS:

$$\sqrt{40}$$

PTS: 1                    DIF: Level A  
 NAT: NT.CCSS.MTH.10.9-12.G.CO.9 | NT.CCSS.MTH.10.9-12.G.GPE.7  
 TOP: Chapter 1 Test, Form A                    MSC: DOK 2

15. ANS:

 $\overleftrightarrow{BA}, f$ 

PTS: 1

DIF: Level A

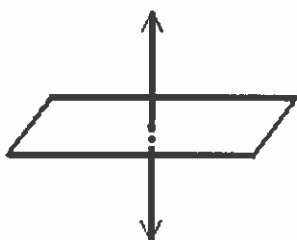
NAT: NT.CCSS.MTH.10.9-12.G.CO.1

TOP: Chapter 1 Test, Form A

MSC: DOK 1

16. ANS:

Sketches vary.



PTS: 1

DIF: Level A

REF: MLGE0184

TOP: Lesson 1.1 Identify Points, Lines, and Planes

KEY: draw | plane | intersects | line

MSC: DOK 2

NOT: 978-0-547-31534-8

17. ANS:

A, C, and G

PTS: 1

DIF: Level A

NAT: NT.CCSS.MTH.10.9-12.G.CO.1

TOP: Chapter 1 Test, Form A

MSC: DOK 1

18. ANS:

Two angles are complementary if the sum of their measures is  $90^\circ$ .

PTS: 1

DIF: Level A

REF: MGEH0013

NAT: NT.CCSS.MTH.10.9-12.G.CO.1

TOP: Lesson 1.5 Describe Angle Pair Relationships

KEY: complementary angles | definition

MSC: DOK 1

NOT: 978-0-547-31534-8

19. ANS:

 $3^\circ$ 

PTS: 1

DIF: Level A

TOP: Chapter 1 Test, Form A

MSC: DOK 2

20. ANS:

 $\angle 1$  or  $\angle 3$ 

PTS: 1

DIF: Level A

REF: MIM10112

NAT: NT.CCSS.MTH.10.9-12.G.CO.1

LOC: NCTM.PSSM.00.MTH.9-12.GEO.1.a

TOP: Lesson 1.5 Describe Angle Pair Relationships

KEY: supplementary angles

MSC: DOK 1

NOT: 978-0-547-31534-8

21. ANS:  
172°
- PTS: 1 DIF: Level A TOP: Chapter 1 Test, Form A  
MSC: DOK 2
22. ANS:  
 $x = 3$
- PTS: 1 DIF: Level B REF: MLGE0198  
LOC: NCTM.PSSM.00.MTH.9-12.PRS.3 | NCTM.PSSM.00.MTH.9-12.REP.2  
TOP: Lesson 1.5 Describe Angle Pair Relationships  
KEY: supplementary angles | adjacent angles | solve MSC: DOK 2  
NOT: 978-0-547-31534-8
23. ANS:  
5
- PTS: 1 DIF: Level A REF: MLGM0004  
TOP: Lesson 1.2 Use Segments and Congruence  
KEY: segment length | segment addition postulate MSC: DOK 2  
NOT: 978-0-547-31534-8
24. ANS:  
6 meters
- PTS: 1 DIF: Level B REF: 7f4eb5e5-cdbb-11db-b502-0011258082f7  
TOP: Lesson 1.6 Classify Polygons KEY: regular polygon | octagon | side length  
MSC: DOK 2 NOT: 978-0-547-31534-8
25. ANS:  
34°, acute
- PTS: 1 DIF: Level A TOP: Chapter 1 Test, Form A  
MSC: DOK 1
26. ANS:  
*B*
- PTS: 1 DIF: Level A NAT: NT.CCSS.MTH.10.9-12.G.CO.1  
TOP: Chapter 1 Test, Form A MSC: DOK 1
27. ANS:  
 $\angle DCE, \angle ECD, \angle C$
- PTS: 1 DIF: Level A REF: XEGS0302 NAT: NT.CCSS.MTH.10.9-12.G.CO.1  
TOP: Lesson 1.4 Measure and Classify Angles KEY: angle | name  
MSC: DOK 1 NOT: 978-0-547-31534-8

28. ANS:  
2.8 miles

PTS: 1                    DIF: Level B                    REF: MC100259  
 LOC: NCTM.PSSM.00.MTH.9-12.GEO.2.a | NCTM.PSSM.00.MTH.9-12.PRS.2  
 TOP: Lesson 1.3 Use Midpoint and Distance Formulas  
 KEY: distance formula | coordinate geometry                    MSC: DOK 2  
 NOT: 978-0-547-31534-8

## OTHER

29. ANS:  
The figure is not a regular polygon because it is not equiangular.

PTS: 1                    DIF: Level B                    REF: MAC20805  
 LOC: NCTM.PSSM.00.MTH.9-12.PRS.4 | NCTM.PSSM.00.MTH.9-12.REA.1 |  
 NCTM.PSSM.00.MTH.9-12.COM.3                    TOP: Lesson 1.6 Classify Polygons  
 KEY: polygon | regular polygon | explain                    MSC: DOK 3                    NOT: 978-0-547-31534-8

30. ANS:  
The figure is not a polygon because all sides are not segments.

PTS: 1                    DIF: Level A                    REF: MAC20802  
 LOC: NCTM.PSSM.00.MTH.9-12.PRS.4 | NCTM.PSSM.00.MTH.9-12.REA.1 |  
 NCTM.PSSM.00.MTH.9-12.COM.3                    TOP: Lesson 1.6 Classify Polygons  
 KEY: polygon | determine | explain                    MSC: DOK 3                    NOT: 978-0-547-31534-8

## COMPLETION

31. ANS: equilateral

PTS: 1                    DIF: Level A                    REF: BS022036                    TOP: Lesson 1.6 Classify Polygons  
 KEY: definition | regular polygon                    MSC: DOK 1                    NOT: 978-0-547-31534-8

