ANSWERS

LESSON 1.1 • Building Blocks of Geometry

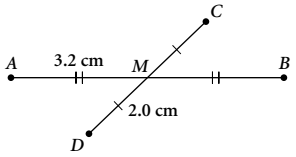
1. S **2.** 9 cm **3.** $\overline{SN}$ **4.** endpoint

5. $\overline{NS}$ **6.** $\overline{PQ}$ **7.** $\overrightarrow{SP}$

8. $\overline{KN} \cong \overline{KL}$, $\overline{NM} \cong \overline{LM}$, $\overline{NO} \cong \overline{LO}$

9. $E(-14, 15)$

10.



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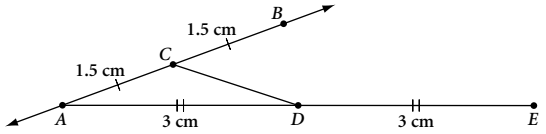
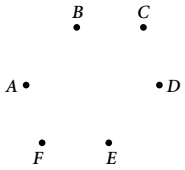


12. $\overleftrightarrow{AB}$, $\overleftrightarrow{AC}$, $\overleftrightarrow{AD}$, $\overleftrightarrow{AE}$, $\overleftrightarrow{AF}$, $\overleftrightarrow{BC}$, $\overleftrightarrow{BD}$, $\overleftrightarrow{BE}$, $\overleftrightarrow{BF}$, $\overleftrightarrow{CD}$, $\overleftrightarrow{CE}$, $\overleftrightarrow{CF}$, $\overleftrightarrow{DE}$, $\overleftrightarrow{DF}$, $\overleftrightarrow{EF}$ (15 lines)



13. Possible coplanar set: {*C, D, H, G*}; 12 different sets

COORDINATE GEOMETRY 1: Midpoint

1. $(4, -2)$

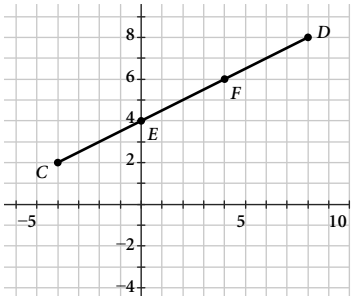
2. $(-1, -8)$

3. $\left(\frac{5}{2}, 1\right)$

4. $(5, -15)$

5. $(2, 5)$

6. Using the coordinate grid, find the distance between the x-coordinates and the distance between the y-coordinates. Divide each distance by 3 to get the x- and y- coordinates: $E(0, 4)$ and $F(4, 6)$.



7. $(1, 3)$

8. $\left(2, \frac{1}{2}\right)$

9. Each segment has only 1 midpoint. Using the coordinates of each endpoint in the equation for the midpoint only results in one unique point.

10. There are an infinite number of segments that have the midpoint $(2, -3)$. There can be an infinite number of segments rotated about this midpoint with various lengths in the coordinate plane. If you look at a three-dimensional plane, there are even more possible segments.

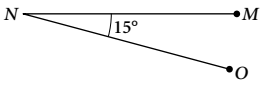
LESSON 1.2 • Finding Angles

1. vertex **2.** bisector **3.** side

4. 126° **5.** $\angle DAE$ **6.** 133°

7. 47° **8.** 63° **9.** 70°

10.



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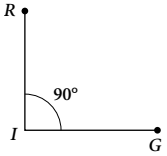

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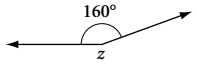
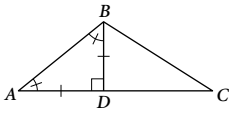


13. 90° **14.** 120° **15.** 75°

16.



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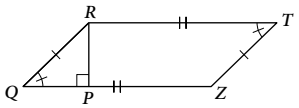


LESSON 1.3 • Creating Definitions

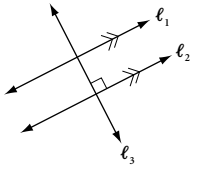
1. d **2.** c **3.** e **4.** i

5. f **6.** b **7.** h **8.** a

9. g

10. They have the same measure, 13°. Because $m\angle Q = 77°$, its complement has measure 13°. So $m\angle R = 13°$, which is the same as $m\angle P$.

11.



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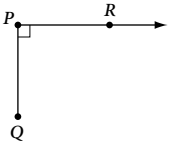

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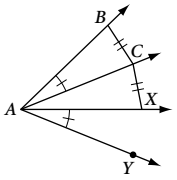
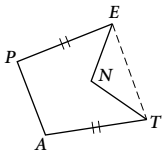
13.



LESSON 1.4 • Polygons

Polygon name	Number of sides	Number of diagonals
1. Triangle	**3**	**0**
2. Quadrilateral	**4**	2
3. Pentagon	5	**5**
4. Hexagon	**6**	**9**
5. Heptagon	**7**	**14**
6. Octagon	8	**20**
7. Decagon	**10**	35
8. Dodecagon	12	**54**

9.



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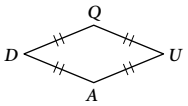


11. $\overline{AC}$, $\overline{AD}$, $\overline{AE}$

12. Possible answer: $\overline{AB}$ and $\overline{BC}$

13. Possible answer: $\angle A$ and $\angle B$

14. Possible answer: $\overline{AC}$ and $\overline{FD}$

15. 82° **16.** 7.2 **17.** 61° **18.** 16.1

19. 6.2 cm

LESSON 1.5 • Triangles

For Exercises 1–7, answers will vary. Possible answers are shown.

1. $\overline{AB} \parallel \overline{GH}$

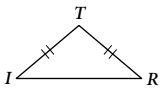
2. $\overline{EF} \perp \overline{BI}$

3. $\overline{CG} \cong \overline{FH}$

4. $\angle DEG$ and $\angle GEF$

5. $\angle DEG$ and $\angle GEF$

6.



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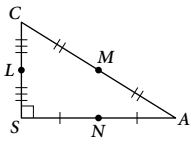

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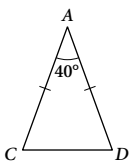

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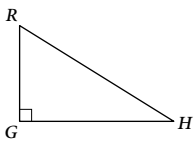


For Exercises 10–12, answers may vary. Possible answers are shown.

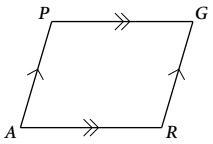
10. $F(8, -2)$

11. $D(4, 3)$

12. $G(10, -2)$

LESSON 1.6 • Special Quadrilaterals

1.



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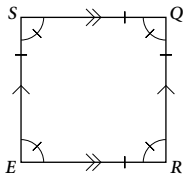

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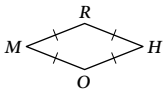

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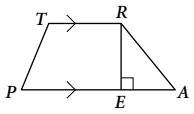

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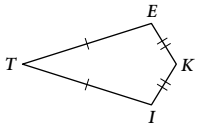
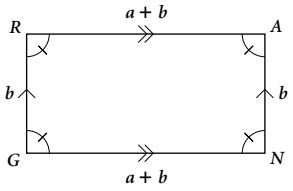


For Exercises 6–10, 12, and 13, answers may vary. Possible answers are shown.

6.



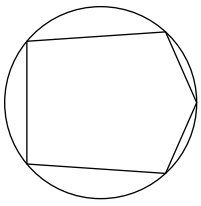
7. *ACFD* **8.** *EFHG* **9.** *BFJD* **10.** *BFHD*

11. $D(0, 3)$ **12.** $E(0, 5)$ **13.** $G(16, 3)$

LESSON 1.7 • Circles

1. 48° **2.** 132° **3.** 228° **4.** 312°

5.



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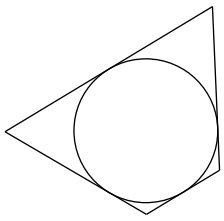
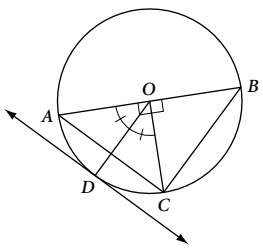


7. (8, 2); (3, 7); (3, −3)

8.



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