Warm Up 15

1. endpoints
2. one
3. acute and isosceles; right and scalene; equiangular and equilateral

Lesson Practice 15

a. Polygon **A** has 6 sides, so it is a hexagon. It is equilateral but not equiangular, so it is irregular. Polygon **B** has 8 sides, so it is an octagon. It is equiangular and irregular. Polygon **C** is a nonagon. It is irregular. Polygon **D** is a regular pentagon.

b. $\overline{HK}$ or $\overline{HL}$

c. Concave; $\overline{WY}$ and $\overline{WZ}$ both contain points in the exterior of the polygon.

d. Yes; Corresponding pairs of angles and sides are congruent.

e. $\angle 1$ is interior; $\angle 2$ is exterior; $\angle 3$ is interior; $\angle 4$ is exterior

f. hexagons; regular; All sides and angles of each polygon are congruent

g. Yes; Corresponding sides and angles are congruent; Convex; No diagonals contain points in the exterior

Practice 15

1. If the statement were true, then 3 and 3 would both have to be even since $3 + 3 = 6$. This is false.

2. Since the canal and the road are parallel, perpendicular lines drawn from the road will also meet the canal at a right angle. The farmer can simply measure perpendicular lines of the road that are equally spaced and these lines will give an equal exposure to the canal for each divided area.

3. 336 ft^2

4. interior angles: $\angle KLM$, $\angle MNJ$, $\angle JKL$, $\angle NJK$, $\angle NML$; exterior angles: $\angle QMN$, $\angle NJP$

5. If you find the absolute value of a number, then it is nonnegative.

6. If a person is bilingual, then he or she speaks two languages.

7. (3, 1.5)

8. Sample: a drawing where the third coplanar line is parallel to one of the other two

9. Double the previous number, then subtract 1.

10. Transitive Property of Equality

11. alternate exterior angles, alternate interior angles, and corresponding angles

12. 2.5

13. **a.** 24 cm^2

    b. 12 cm^2

    c. $\frac{1}{2}(8)(3)\ cm^2$
    $= \frac{1}{2}(24)\ cm^2$
    $= 12\ cm^2$

14. quadrilateral; no; yes; no

15. **a.** corresponding angles

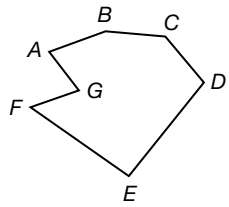
b. The angles are congruent because their measures are equal, and since they are corresponding angles, the Converse of the Corresponding Angles Postulate implies that the rails are parallel.

16. A kite is a quadrilateral with exactly two pair of congruent consecutive sides, and the opposite sides are not parallel.

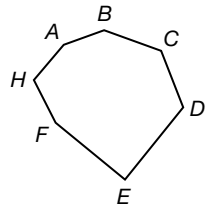
17. 150° and 30°

18. $m\angle 1 + m\angle 2 = 180°$; $\angle 1$ and $\angle 2$ are supplementary; $\angle 1$ and $\angle 2$ are same-side interior angles; by the Converse of the Same-Side Interior Angles Theorem, lines *m* and *n* are parallel.

19. **a.** Sample:



b. Sample:



20. $\angle 1$ and $\angle 5$, $\angle 2$ and $\angle 6$, $\angle 3$ and $\angle 7$, $\angle 4$ and $\angle 8$

21. 31.76 ft

22. (2.5, 1.5), (0.5, −0.5), (0, 2)

23. 5 cm

24. A

25. C

26. The next term would be 33; The pattern is "multiply by 2, subtract 1." The pattern "add 2^{n-1}" is also valid.

27. 68 cm

28. 360°

29. 40.8 in.

30. concave