

Warm Up 65

1. quadrilateral
2. sometimes true
3. B

Lesson Practice 65

- a. yes
- b. no
- c. yes
- d. no
- e. yes
- f. yes; the triangle on the right side of the sign is also equilateral with the first, by SSS Congruence. Therefore, the diagonals of the sign are congruent and it is a rectangle.

Practice 65

- $x = 10$
- 147 in^3
- The concluding statement is not what was to be shown, and should be “ $\angle 2$ and $\angle 3$ are supplementary”; and the second step’s reason should be “Linear Pair Theorem” not “Definition of Supplementary Angles”.
- $A = 3$;
 $P = 2 + 2\sqrt{5} + 4\sqrt{2}$
- 10785.6 in^3
- 9 mi/hr
- 26 cm
- It is a square.
- 5.13 ft
- $x = 20.5^\circ$
- A
- $x = 3\frac{1}{4} \text{ in.}; P = 11 \text{ in.}$
- 12.02 ft
- All angles have the same measure.
- can be a triangle; right
- B
- approximately 6378 ft^2
- $\langle -1, 5 \rangle$
- 20 in.
- If the opposite angles are supplementary, then $m\angle 1 + m\angle 3 = 180^\circ$ and $m\angle 2 + m\angle 4 = 180^\circ$. Since the quadrilateral is a parallelogram, $m\angle 1 = m\angle 3$ and $m\angle 2 = m\angle 4$. By substitution, $m\angle 1 + m\angle 1 = 180^\circ$ and $2m\angle 1 = 180^\circ$, so $m\angle 1 = 90^\circ$. Therefore, all angles are right angles and the figure is a rectangle.
- 30 feet
- $x = 36$

23. 4.79 mm
24. Yes, they are parallel, because transversals which are divided proportionately transverse parallel lines.
25. (14, 4), (6, -4), or (-6, 4)
26. $\angle 1 = 72^\circ$
27. The circumcenter lies on the midpoint of the hypotenuse.
28. $\widehat{AC} = 70^\circ$
29. 9.2 inches or 8 inches
30. No, because by the Converse of the Pythagorean Theorem, $\triangle GHJ$ is obtuse.