Answer Key

Lesson 8.4

Practice Level C

1. true; false   **2.** false; true   **3.** true; false   **4.** false; false

5. true; true; A rhombus is a square if and only if it is a rectangle.   **6.** 27°

7. 54°   **8.** 126°   **9.** 54°   **10.** 126°   **11.** 90°   **12.** 90°   **13.** 63°   **14.** 11   **15.** 60°   **16.** 10

17. rhombus; All sides are ≅.; $x = 5, y = 11$

18. square; All sides are ≅ and all ∠s are right ∠s.; $x = 4, y = 9$ **19.** 71°   **20.** 38°   **21.** about 28.6

22. about 41.6   **23.** 34°   **24.** 112°   **25.** 16.5   **26.** about 18.5

27. Given; Diagonals of ▱ bisect each other.; $\overline{HD} \cong \overline{DT}$; *DART* is a rhombus.; Definition of rhombus; Substitution; $WA = WD + DA, HT = HD + DT; WA = HT$; Theorem 8.13

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Statements	Reasons
1. $\triangle GEC \cong \triangle GHX$	**1.** Given
2. $\overline{GE} \cong \overline{GH}$	**2.** Corresp. parts of ≅ △'s are ≅.
3. *GEBH* is a ▱.	**3.** Given
4. $\overline{GH} \cong \overline{EB}, \overline{GE} \cong \overline{HB}$	**4.** Theorem 8.3
5. $\overline{GH} \cong \overline{EB} \cong \overline{GE} \cong \overline{HB}$	**5.** Substitution
6. *GEBH* is a rhombus.	**6.** A ▱ with 4 ≅ sides is a rhombus.

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Statements	Reasons
1. *JXPE* is a ▱.	**1.** Given
2. $\overline{EJ} \cong \overline{PX}, \overline{EP} \cong \overline{JX}$	**2.** Opp. sides of ▱ are ≅.
3. $\overline{EX} \cong \overline{EX}$	**3.** Reflex. Prop. of ≅
4. $\triangle JXE \cong \triangle PEX$	**4.** SSS ≅ Postulate
5. $\angle J \cong \angle XPE$	**5.** Corresp. parts of ≅ △'s are ≅.
6. $\overline{XP} \perp \overline{EN}$	**6.** Given
7. $\angle XPE$ is a right ∠.	**7.** Definition of ⊥
8. $\angle J$ is a right ∠.	**8.** Substitution
9. *JANE* is a ▱.	**9.** Given
10. $\angle J$ and $\angle A$ are supplementary.	**10.** Adj. ∠s of ▱ are supplementary.
11. $\angle A$ is a right ∠.	**11.** If 2 ∠s are suppl. and one is a rt. ∠, then the other is a rt. ∠.
12. $\angle N$ and $\angle PEJ$ are right ∠s.	**12.** Opp. ∠s of a ▱ are ≅.
13. *JANE* is a rectangle.	**13.** A ▱ with 4 rt. ∠s is a rectangle.