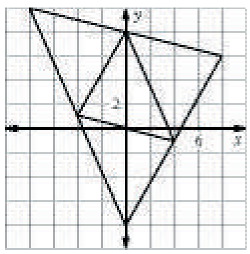
# Answer Key

## Lesson 8.3

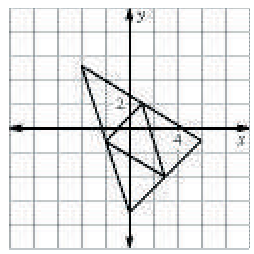
### Practice Level C

**1.** 5 **2.** 8 **3.** 14 **4.** 7 **5.** 12 **6.** 6 **7.** yes **8.** yes **9.** no **10.** no **11.** no **12.** yes **13.** yes **14.** yes **15.** slope of $\overline{AB}$ = slope of $\overline{CD} = -1$ and slope of $\overline{BC}$ = slope of $\overline{DA} = 5$, so $ABCD$ is a ▱ by definition. **16.** $AB = CD = \sqrt{17}$ and $BC = DA = 3\sqrt{5}$, so $ABCD$ is a ▱ by Theorem 8.7.

**17.** (8, 6), (0, −8), and (−8, 10)




**18.** (6, −1), (0, −7), and (−4, 5)




**19.** Regular hexagon $JKLMNO$; Definition of regular polygon; $\triangle OJK \cong \triangle NML$; Corresponding parts of $\cong$ $\triangle$'s are $\cong$.; $\overline{ON} \cong \overline{KL}$; Theorem 8.7

**20.**

| Statements | Reasons |
|---|---|
| **1.** $VWKJ$ and $SJRU$ are ▱. | **1.** Given |
| **2.** $\angle W \cong \angle J$, $\angle J \cong \angle U$ | **2.** Opposite $\angle$s of a ▱ are $\cong$. |
| **3.** $\angle W \cong \angle U$ | **3.** Transitive Prop. of $\cong$ |

**21.** Because $ABCD$ is a ▱, opposite sides are $\parallel$.

So $\overline{AD} \parallel \overline{BC}$ and segments contained within $\parallel$ segments are also $\parallel$ so $\overline{AE} \parallel \overline{BF}$. We know opposite sides of ▱ are $\cong$ so $\overline{AD} \cong \overline{BC}$. Since $E$ and $F$ are given as midpoints we can show $\overline{AE} \cong \overline{ED}$ and $\overline{CF} \cong \overline{FB}$, so through Segment Addition Postulate and Division Property of Equality we can show $\overline{AE} \cong \overline{FB}$. So quadrilateral $ABFE$ is a ▱ since one pair of opposite sides is $\parallel$ and $\cong$.