# Answers for 4.5

*For use with pages 252–255*

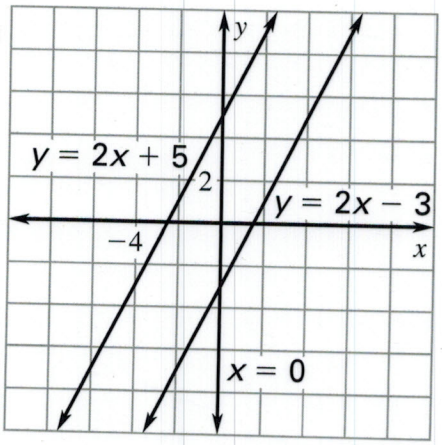
## 4.5 Skill Practice

1. *Sample answer:* A flow proof shows the flow of a logical argument.
2. a pair of congruent sides that are either both included or both not included
3. yes; AAS
4. no
5. yes; ASA
6. There is no AAA postulate or theorem.
7. B
8. $\angle F, \angle L$
9. $\angle F, \angle L$
10. $\overline{HG}, \overline{NM}$
11. $\angle AFE \cong \angle DFB$ by the Vertical Angles Theorem.
12. $\overline{ED} \cong \overline{ED}$ by the Reflexive Property of Segment Congruence.
13. $\angle EDA \cong \angle DCB$ by the Corresponding Angles Postulate.
14. yes; SAS
15. No; there is no AAA postulate or theorem.
16. No; $\overline{AC}$ and $\overline{DE}$ are not corresponding sides.
17. No; the segments that are congruent are not corresponding sides.
18. no
19. yes; the SAS Congruence Postulate
20. no
21. **a.** $\overline{BC}$ and $\overline{AD}$ are parallel, because their slopes are equal, with $\overline{AC}$ being a transversal. The Alternate Interior Angles Theorem applies.

    **b.** $\overline{AB}$ and $\overline{CD}$ are parallel, because their slopes are equal, with $\overline{AC}$ being a transversal. The Alternate Interior Angles Theorem applies.

    **c.** Using parts 21a, 21b, and the fact that $\overline{AC} \cong \overline{CA}$, it can be shown they are congruent by ASA.

**22. a.**




**b.** Any real value except 2; $-\frac{1}{2}$ or 0; the resulting triangles are right triangles with one pair of acute angles forming a linear pair and both hypotenuses 4 units long, so they are congruent by AAS.

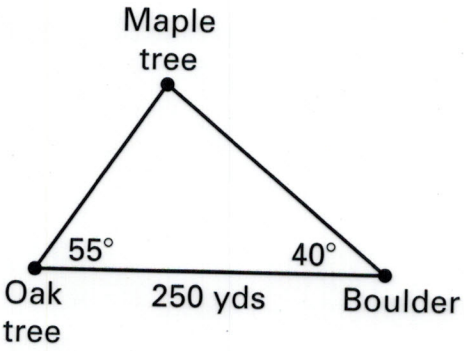
### 4.5 Problem Solving

**23.** Two pairs of angles and an included pair of sides are congruent. The triangles are congruent by ASA.

**24.** Two pairs of angles and a non-included pair of sides are congruent. The triangles are congruent by AAS.

**25.** $\overline{AD} \parallel \overline{CE}$; Given; Alt. Int. $\angle$s Thm.; Alt. Int. $\angle$s Thm.; AAS

**26.**




Yes. *Sample answer:* By the ASA Congruence Postulate, the triangle formed with these measures is unique and the third vertex gives the location of the maple tree.

**27.** AAS

**28.** Since all right angles are congruent and the right angles are the included angles of the congruent legs in the triangles, the triangles are congruent by SAS.

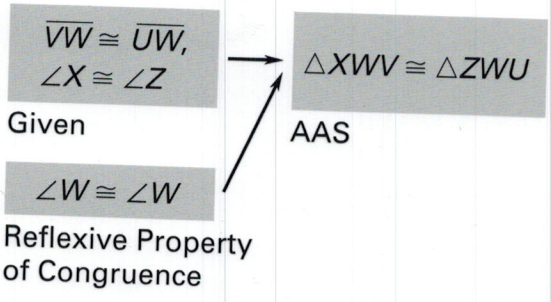
**29.** Since all right angles are congruent, the two triangles are congruent by either AAS, if the side is not included, or ASA, if it is the included side.

**30.** Since all right angles are congruent, the two triangles are congruent by AAS.

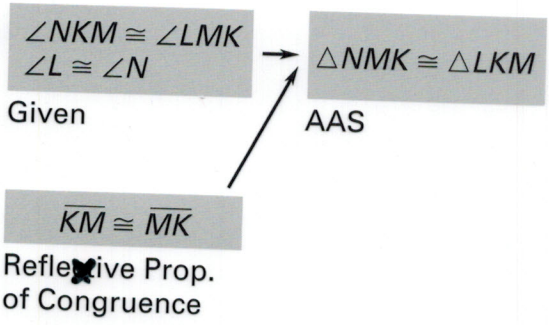
**31.** Statements (Reasons)

1. $\overline{AK} \cong \overline{CJ}$, $\angle BJK \cong \angle BKJ$, $\angle A \cong \angle C$ (Given)
2. $\triangle ABK \cong \triangle CBJ$ (ASA)

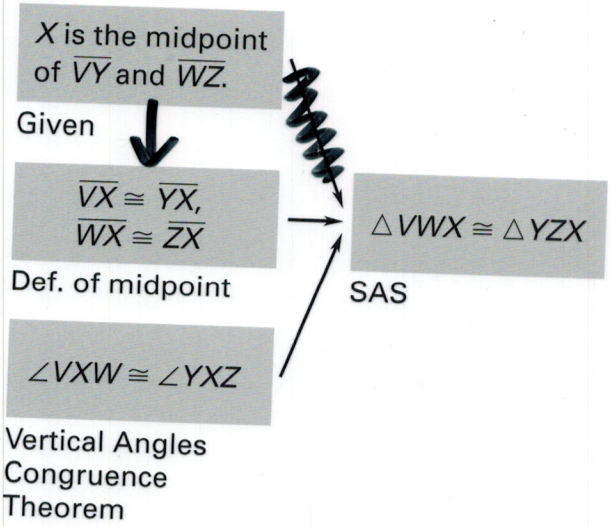
**32.**



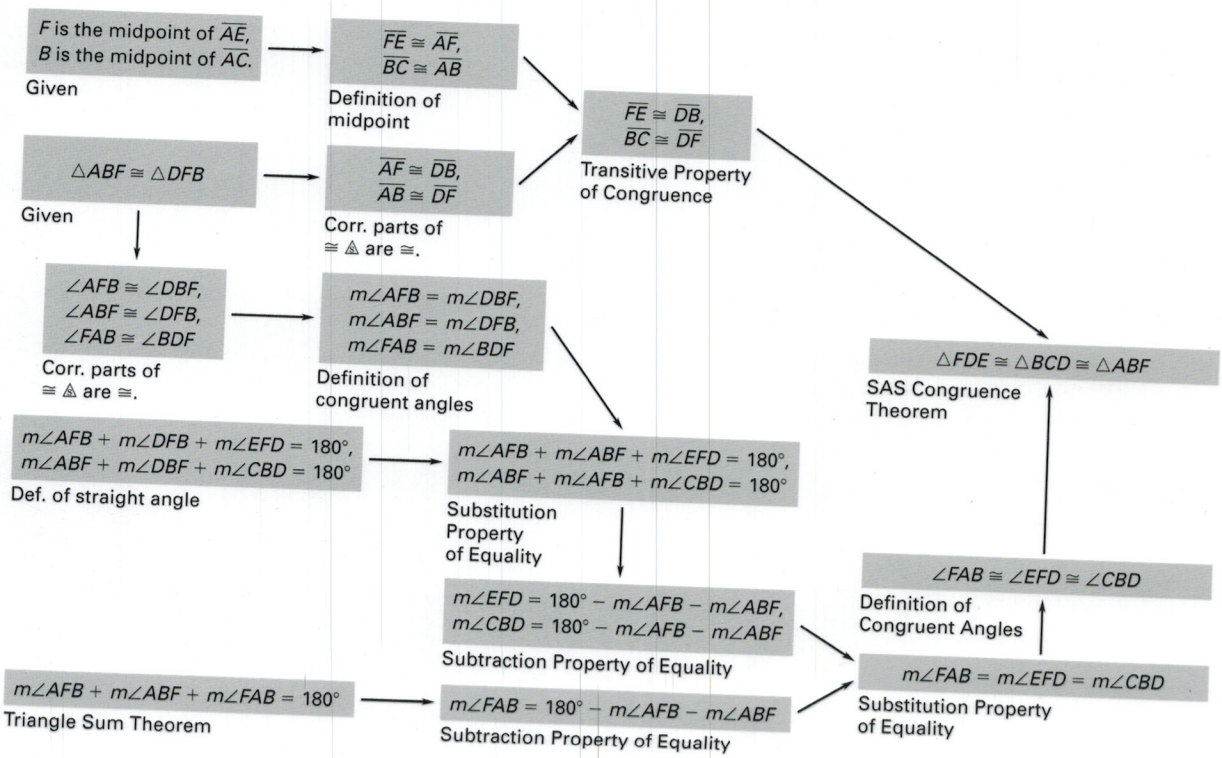

**33.**




**34.**




**35.**



### 4.5 Mixed Review

**36.** 51

**37.** 69

**38.** 85

**39.** $y = x + 3$

**40.** $y = -2x$

**41.** SSS

**42.** HL

**43.** SAS