

6-34. Reasoning can vary. See sample responses below.

- a. $a = 123^\circ$, when lines are //, corr. \angle s are \cong , $b = 123^\circ$, when lines are //, alt. int. \angle s are \cong , $c = 57^\circ$, suppl. \angle s.
- b. all $\cong 98^\circ$, suppl. \angle s, then when lines are //, alt. int. \angle s \cong and corres. or vert. \angle s \cong .
- c. $g = h = 75^\circ$, when lines are //, alt. int. or corres. \angle s \cong , then vert. \angle s \cong .

6-35. See below.

- a. Similar (SSS \sim)
- b. Similar (AA \sim)

6-36. See below.

- a. $x = -4$ and $y = 0$
- b. No solution; the lines are parallel.

6-37. $\frac{4}{10} = \frac{5}{x+5}$, $x = 7.5$

6-38. Let B represent the measure of angle B . Then $(3B + 5^\circ) + B + (B - 20^\circ) = 180^\circ$, so $m\angle A = 122^\circ$, $m\angle B = 39^\circ$, and $m\angle C = 19^\circ$.

6-39. See below.

- a. See possible area model below.

	parents $\frac{1}{3}$	niece $\frac{1}{6}$	boyfriend $\frac{1}{2}$
parents $\frac{1}{3}$	$\frac{1}{9}$	$\frac{1}{18}$	$\frac{1}{6}$
niece $\frac{1}{6}$	$\frac{1}{18}$	$\frac{1}{36}$	$\frac{1}{12}$
boyfriend $\frac{1}{2}$	$\frac{1}{6}$	$\frac{1}{12}$	$\frac{1}{4}$

- b. $\frac{1}{4}$
- c. $\frac{1}{9} + \frac{1}{6} + \frac{1}{6} + \frac{1}{4} = \frac{25}{36} \approx 69\%$

6-40. C