

6-83. See below.

- a. Congruent (HL \cong or SAS \cong)
- b. Congruent (AAS \cong)
- c. Not necessarily congruent.
- d. Congruent (SAS \cong)

6-84. See below.

- a. $x + 4x - 2^\circ = 90^\circ$, $x = 18.4$ (complementary angles)
- b. $2m + 3^\circ + m - 1^\circ + m + 9^\circ = 180^\circ$, $m = 42.25$ (Triangle Angle Sum Theorem)
- c. $7k - 6^\circ = 3k + 18^\circ$, $k = 6$ (vertical angles are equal)
- d. $\frac{x}{16} = \frac{8}{13}$, ≈ 9.8 (corresponding parts of similar figures have equivalent ratios)

6-85. $x = 11$; $m\angle ABC = 114^\circ$

6-86. See below.

- a. Converse: If a triangle is isosceles, then its base angles are congruent. Always true.
- b. Converse: If the sum of the angles in a figure is 180° , then the figure is a triangle. Always true.
- c. Converse: If my mom is happy, then I cleaned my room. Not always true.

6-87. 36%

6-88. D