

3-88. See below.

- a. Scalene triangle
- b. Isosceles triangle
- c. Not possible
- d. Equilateral triangle

3-89. See below.

- a. The two equations should have the same slope but a different y-intercept. This forces the lines to be parallel and not intersect.
- b. When solving a system of equations that has no solution, the equations combine to create an impossible equality, such as $3 = 0$. However, if students claim that “ x and y disappear” when combining the two equations, you may want to point out that another special case occurs when the resulting equality is always true, such as $2 = 2$. This is the result when the two lines coincide, creating infinite points of intersection.

3-90. See below.

- a. Not similar, interior angles are all different.
- b. Must be similar by AA~.
- c. Similar, all side lengths have the same ratio.

3-91. Perimeter = $10 + 10 + 4 + 3 + 4 + 3 + 4 = 38$ units, height of triangle = 8 units, area = 60 square units.

3-92. The reasoning is correct.

3-93. See below.

- a. $3(4x - 12) = 180^\circ, x = 18$
- b. $4.9^2 - 3.1^2 = x^2, x \approx 3.79$
- c. $x + (180^\circ - 51^\circ - 103^\circ) + 82^\circ = 180^\circ, x = 72^\circ$
- d. $3x - 2 = 2x + 9, x = 11$