4-6. See below.

a. $x = 11°$

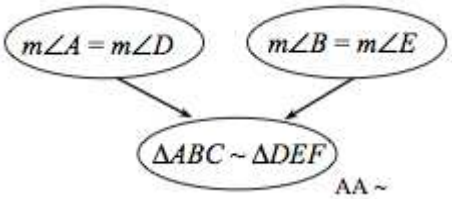
b. $x = 45°$

c. $x = 30°$

d. $x = 68°$

4-7. See below.

a. See flowchart below:



b. Yes, because the triangles are similar (AA ~) and the ratio of the corresponding side lengths is 1 (because $AC = DF$).

4-8. See below.

a. Yes, she used the Pythagorean Theorem.

b. $(x + 1)^2 = x^2 + 2x + 1$

c. $x = 24$

d. 56 units

4-9. $x = 9,\ y = 4, z = 6\frac{2}{3}$

4-10. See below.

a. 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12

b. Yes.

c. $P(\text{even}) = \frac{18}{36}$; $P(10) = \frac{6}{36}$; $P(15) = 0$

d. The sum of 7. $P(7) = \frac{6}{36} = \frac{1}{6}$

4-11. If h represents the number of hours and t represents the temperature, then $t = 77 + 3h$ and $t = 92 - 2h$; $h = 3$ hours and the temperature will be 86°F.