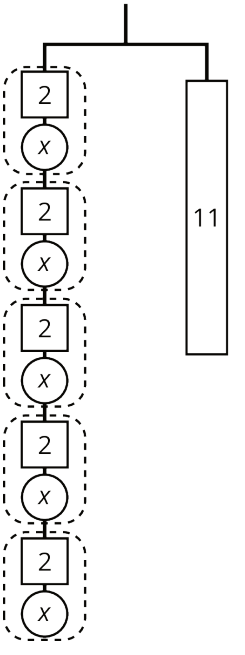
Lesson 8 Practice Problems

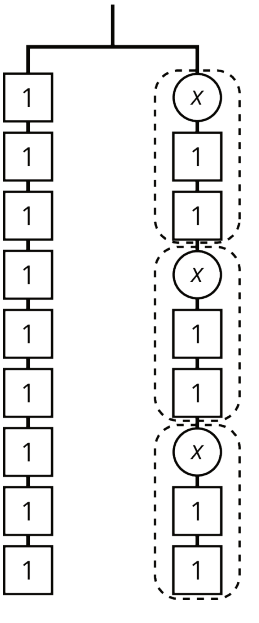
1. Here is a hanger:



   a. Write an equation to represent the hanger.

   b. Solve the equation by reasoning about the equation or the hanger. Explain your reasoning.

2. Explain how each part of the equation $9 = 3(x + 2)$ is represented in the hanger.



   - x
   - 9
   - 3
   - $x + 2$
   - $3(x + 2)$
   - the equal sign

3. Andre is solving the equation $4(x + \frac{3}{2}) = 7$. He says, "I can subtract $\frac{3}{2}$ from each side to get $4x = \frac{11}{2}$ and then divide by 4 to get $x = \frac{11}{8}$." Kiran says, "I think you made a mistake."

    a. How can Kiran know for sure that Andre's solution is incorrect?

    b. Describe Andre's error and explain how to correct his work.

4. Lin has a scale model of a modern train. The model is created at a scale of 1 to 48.

    a. The height of the model train is 102 millimeters. What is the actual height of the train in meters? Explain your reasoning.

    b. On the scale model, the distance between the wheels on the left and the wheels on the right is $1\frac{1}{4}$ inches. The state of Wyoming has old railroad tracks that are 4.5 feet apart. Can the modern train travel on those tracks? Explain your reasoning.

(From Unit 2, Lesson 7.)