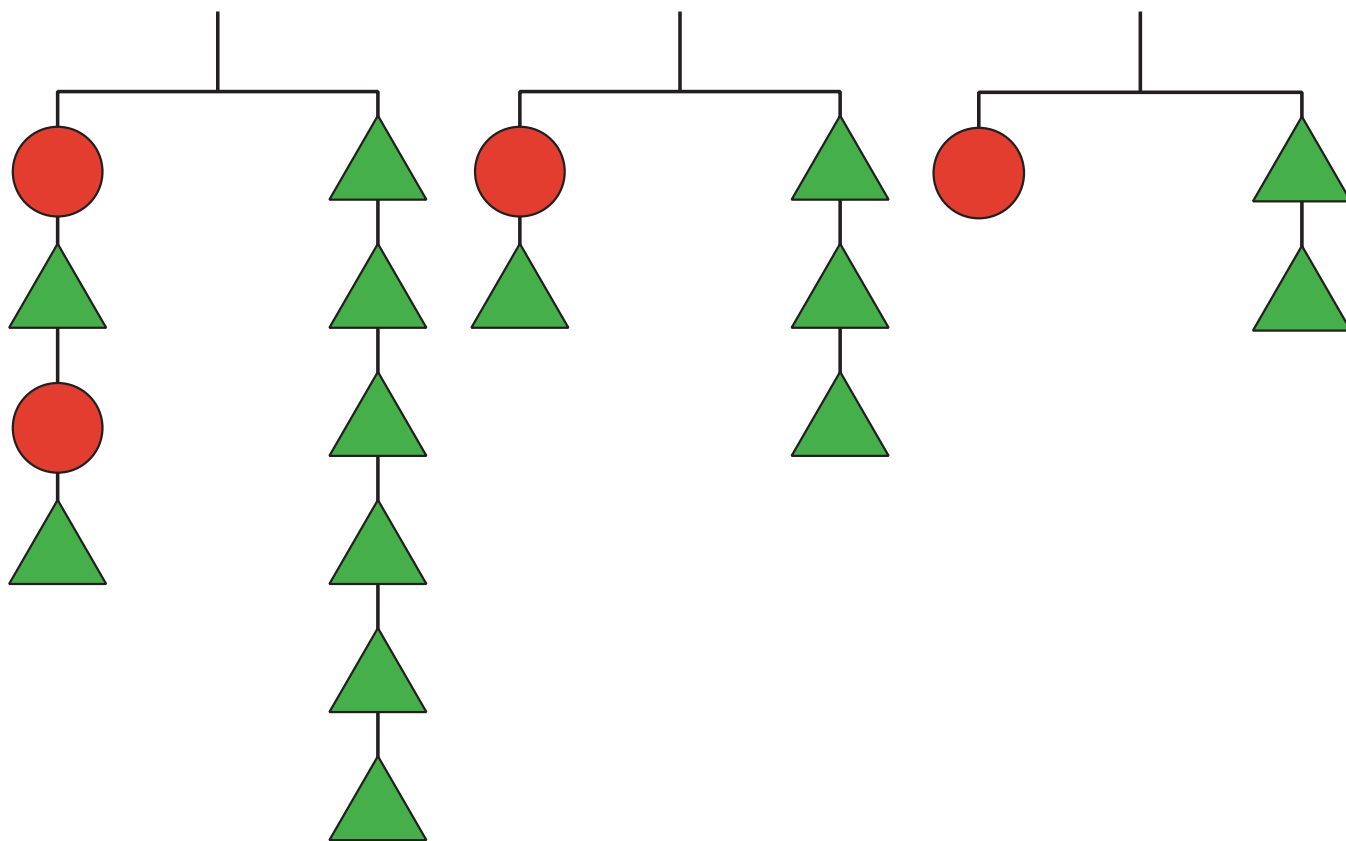


# Equality Diagrams

Let's use hanger diagrams to understand equivalent equations.

## 6.1 Notice and Wonder: Solving Equations

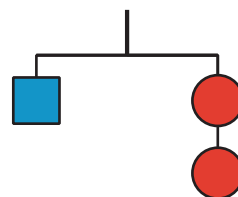
What do you notice? What do you wonder?



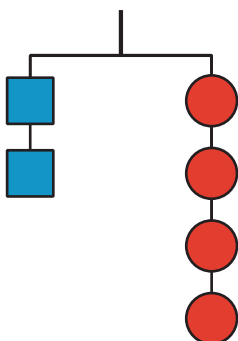
## 6.2 Hanger Diagrams

1. The hanger with 1 square and 2 circles is in balance.

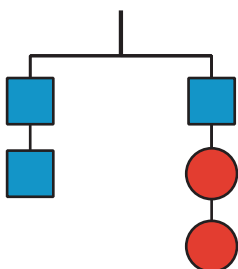
Which of these should also be in balance? Explain your reasoning.



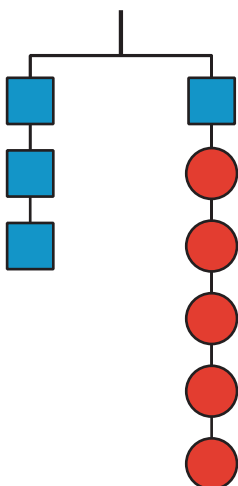
a.



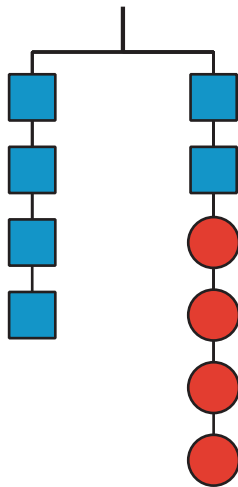
b.



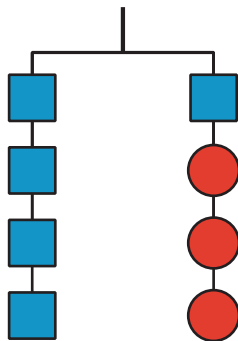
c.



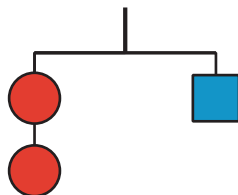
d.



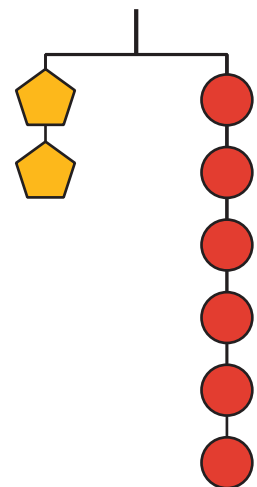
e.



f.

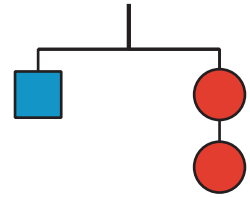


2. This hanger containing 2 pentagons and 6 circles is in balance. Use the hanger diagram to create two additional hangers that would be in balance.



## 6.3 Diagrams and Equations

If each square weighs 10 pounds and each circle weighs  $x$  pounds, then this diagram could be represented by the equation  $10 = 2x$ .



1. Use these weights and each of the 6 hanger diagrams containing squares and circles from the earlier activity about balancing hangers, and write an equation that represents the weights on each hanger.
  - a.
  - b.
  - c.
  - d.
  - e.
  - f.
2. Solve each equation.
  - a.
  - b.
  - c.
  - d.
  - e.
  - f.
3. Compare the solutions to the equations with the answers from the earlier activity about which hangers were balanced. What do you notice?