## Unit 3 Lesson 7: Reasoning about Solving Equations (Part 1)

### 1 Hanger Diagrams (Warm up)

#### Images for Launch

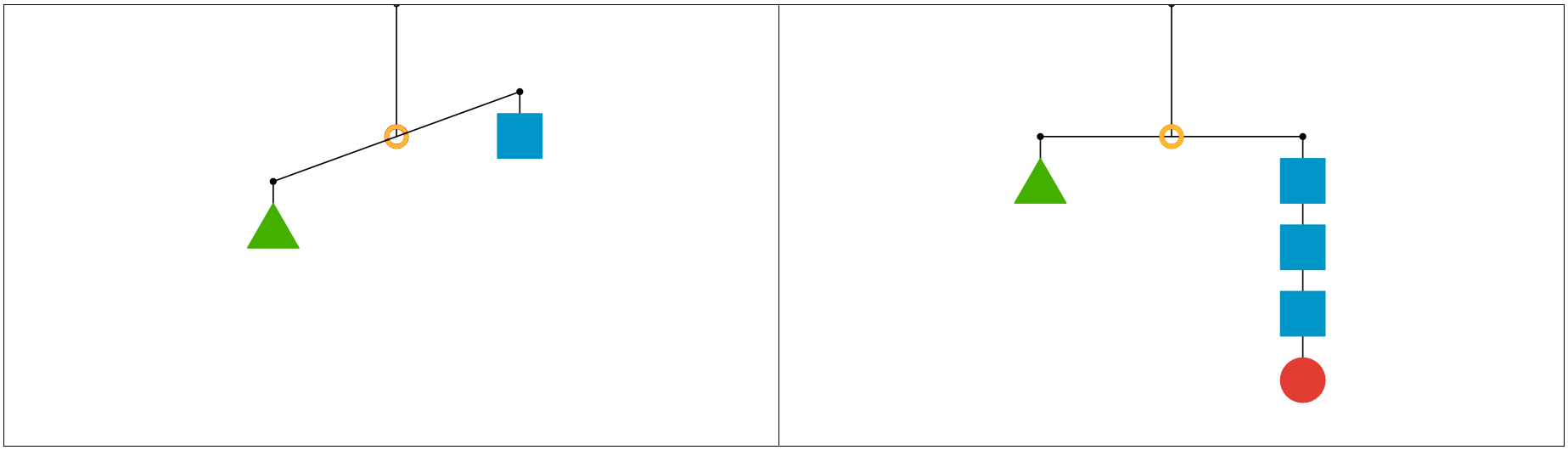


#### Student Task Statement

In the two diagrams, all the triangles weigh the same and all the squares weigh the same.

For each diagram, come up with . . .

1. One thing that *must* be true
2. One thing that *could* be true
3. One thing that *cannot possibly* be true

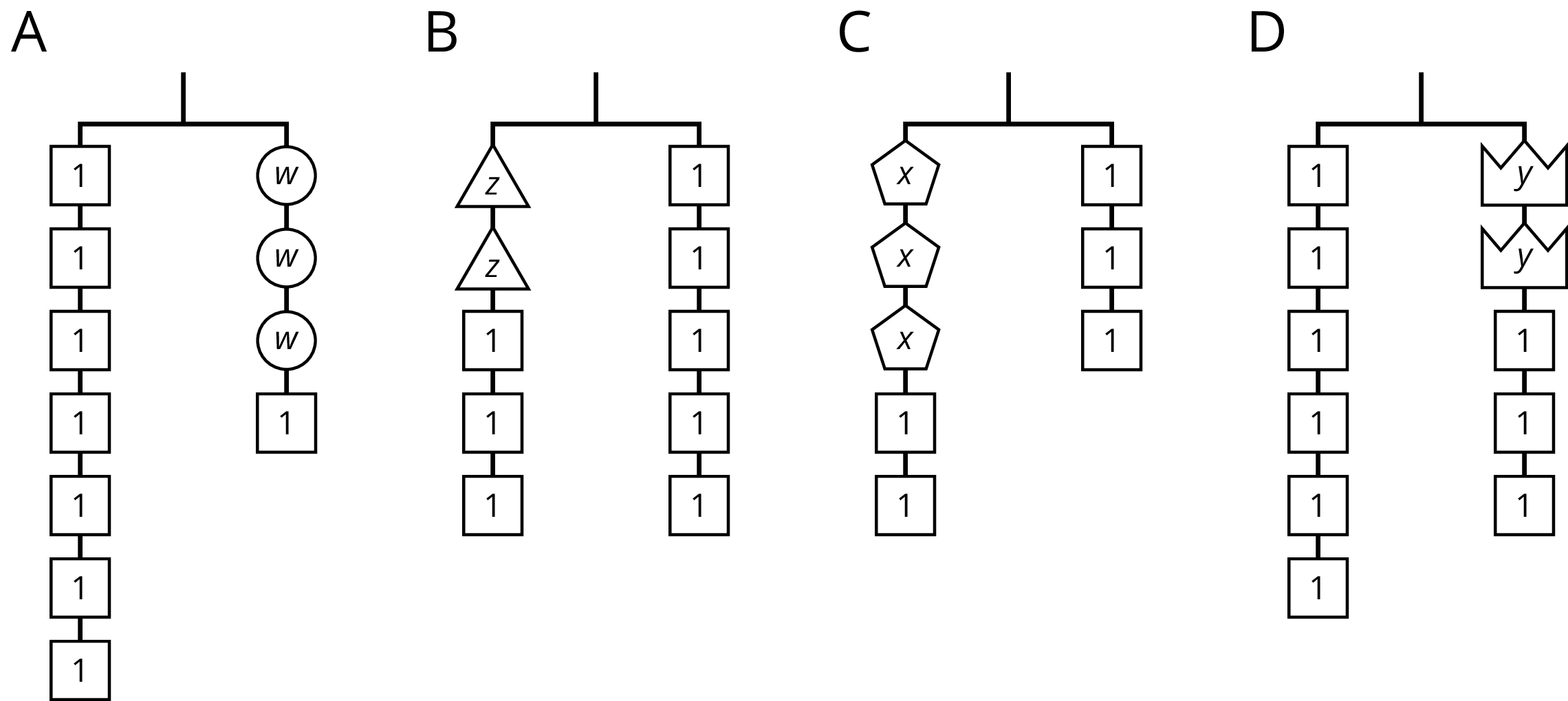


### 2 Hanger and Equation Matching

#### Student Task Statement

On each balanced hanger, figures with the same letter have the same weight.

1. Match each hanger to an equation. Complete the equation by writing , , , or in the empty box.
2. Find the solution to each equation. Use the hanger to explain what the solution means.

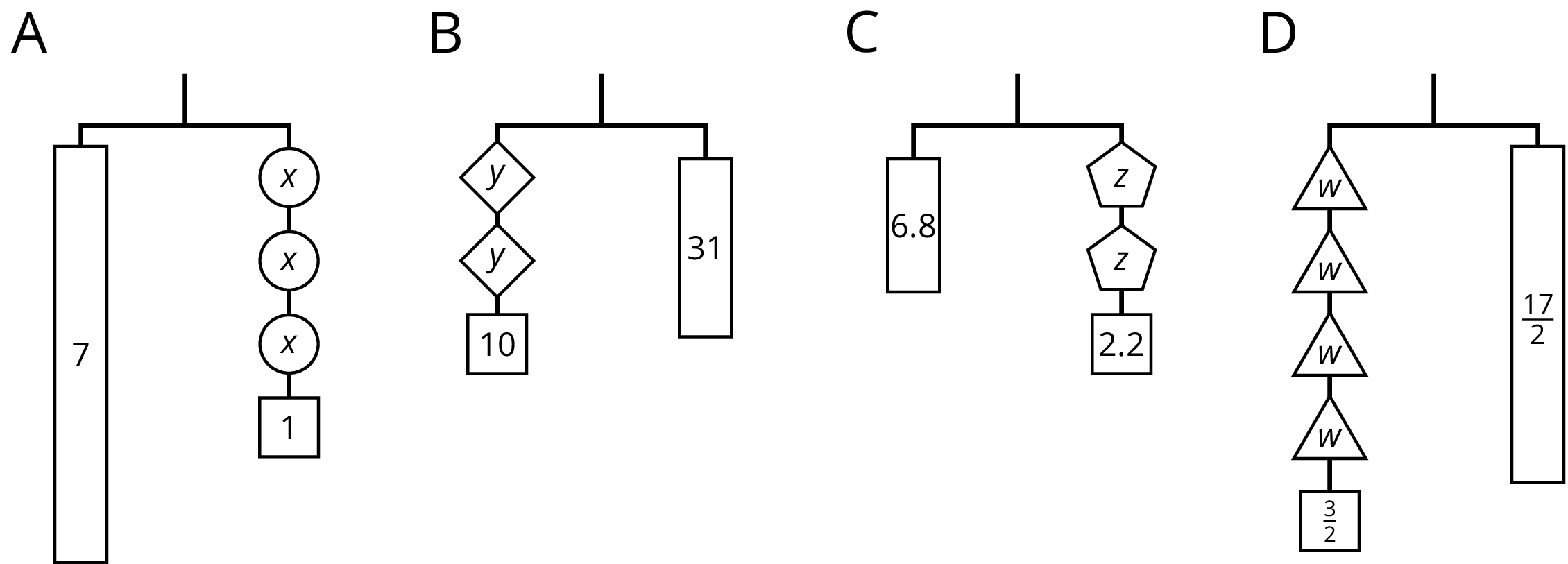


### 3 Use Hangers to Understand Equation Solving

#### Student Task Statement

Here are some balanced hangers where each piece is labeled with its weight. For each diagram:

1. Write an equation.
2. Explain how to figure out the weight of a piece labeled with a letter by reasoning about the diagram.
3. Explain how to figure out the weight of a piece labeled with a letter by reasoning about the equation.





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