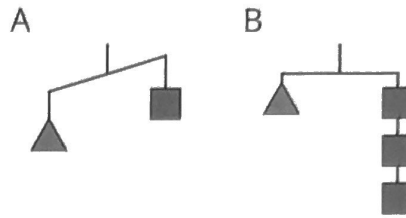


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Lesson 3: Staying in Balance

Let's use balanced hangers to help us solve equations.

3.1: Hanging Around



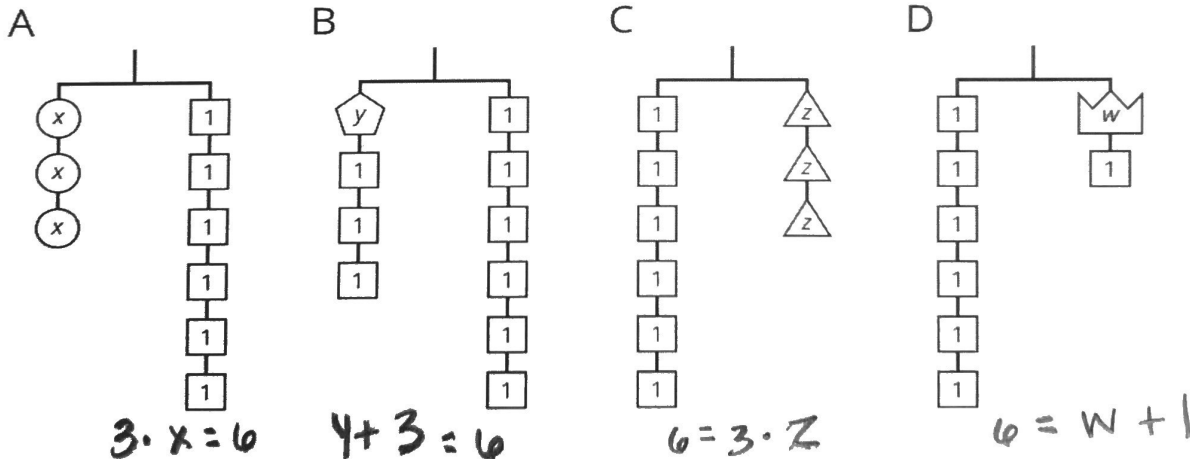
1. For diagram A, find:

- One thing that must be true
- One thing that *could* be true or false
- One thing that *cannot possibly* be true

2. For diagram B, find:

- One thing that *must* be true
- One thing that *could* be true or false
- One thing that *cannot possibly* be true

3.2: Match Equations and Hangers



1. Match each hanger to an equation. Complete the equation by writing x , y , z , or w in the empty blank.

~~y~~ + 3 = 6 y = 2 3 · ~~x~~ = 6 y = z 6 = w + 1 w = 5 6 = 3 · z z = 2

2. Find a solution to each equation. Use the hangers to explain what each solution means.



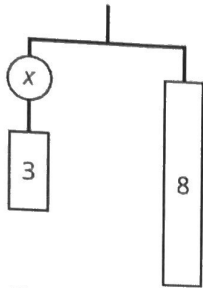
3.3: Connecting Diagrams to Equations and Solutions

m.openup.org/1/6-6-3-3



Here are some balanced hangers. Each piece is labeled with its weight

A



$$x + 3 = 8$$

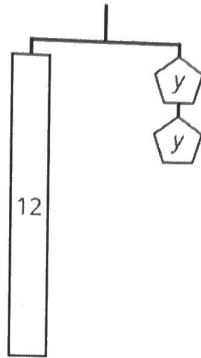
$$x = 8 - 3$$

$$x = 5$$

For each diagram:

1. Write an equation.

B



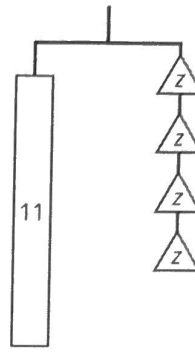
$$12 = y + y$$

$$y = 6$$

$$12 = 2y$$

$$y = 6$$

C

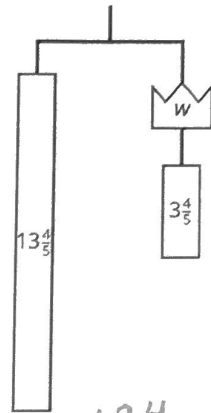


$$11 = 4z$$

$$\frac{11}{4} = z$$

$$2\frac{3}{4} = z$$

D



$$13\frac{4}{5} = w + 3\frac{4}{5}$$

$$13\frac{4}{5} - 3\frac{4}{5} = w$$

$$10 = w$$

3. Explain how to reason with the equation to find the weight of a piece with a letter.

HW week by week 80%