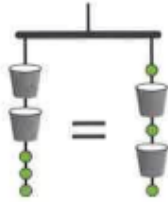


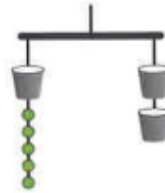
3_1 Puzzle Preview

In each of these problems, a dot (●) equals 1.

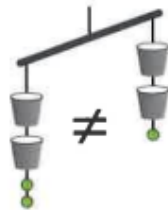
① This mobile *always balances*. Why?



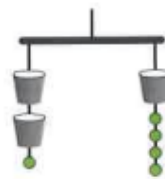
② This mobile *only balances when* the buckets represent a certain number. What number makes it balance?



③ This mobile *never balances* no matter what number the bucket represents. Why?



④ Does this mobile balance *always, sometimes, or never?*



If sometimes, *when?*

Every beam in the mobiles below is balanced. The strings and the beams weigh nothing. Find the weight of each shape.

⑤

● = 1 ☪ = _____

⑥

⬠ = _____ ♣ = 2

⑦

◆ = _____ ★ = 3

⑧

★ = 4 ● = _____

⑨

● = 1 ⬡ = _____

⑩







♻ = 6 ★ = _____

⑪







● = 1 ◆ = _____ ♥ = _____

⑫

♥ = _____ ▲ = 2 ◆ = _____

If   =   , then what number(s) can the  represent?

Discuss & Write What You Think

If  = 2, would the statement “  =   .” be true? Why or why not?