# CUPID'S CHOCO-SORTER

Cupid is organising gift bags of chocolates based on the **number of chocolates** inside each bag.

The Rule: The bags travel from **Left to Right** along the conveyor belts (wires). When two belts are connected by a vertical black line (a comparator), the number of chocolates in the two bags are compared:

- If the bag with the **Larger Number** is on the upper of the two belts, the two bags swap positions.
- Otherwise, the two bags keep their positions.

This means that after a comparator between two bags, a larger bag will always be lower. *Note: A vertical line connects exactly **two** belts (marked with black dots). If a line crosses a belt without a dot, it just passes over it and no comparison happens there.*

A — [10] ●——————● Top
B — [50] ●——————————● [ ]
C — [90] ●——————————● [ ]
D — [20] ●——————● Bot
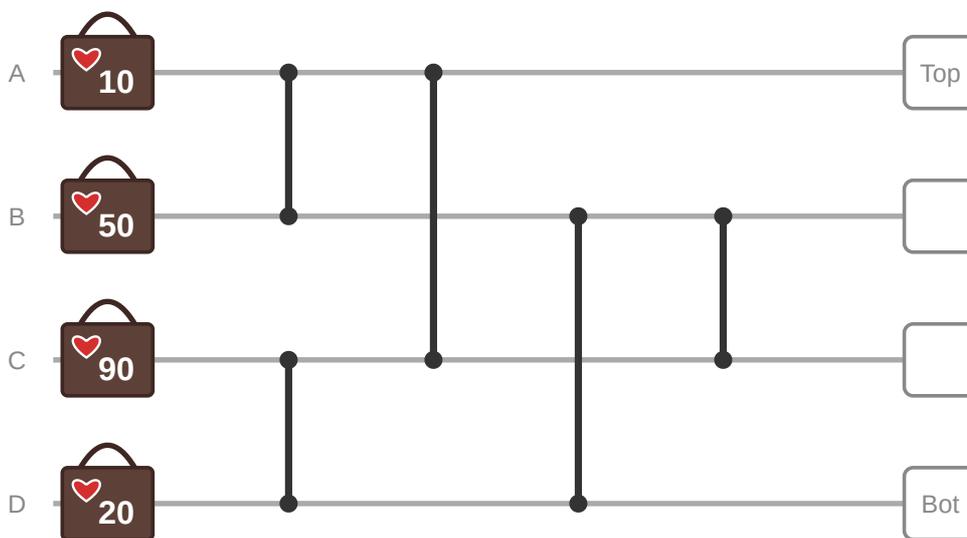
The Challenge:

Q1 Look at the example inputs above (10, 50, 90, 20). Follow the rules carefully. Which number will come out on the **Bottom Belt**?

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Q2 If we input the numbers **3, 1, 4, 2** (in that order from Top to Bottom), what order will they be in when they reach the end?

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Q3 Can you find an input order of numbers (A, B, C, D) that results in the number **100** appearing on the **Top Belt** at the end? (Assume one of the numbers is 100).