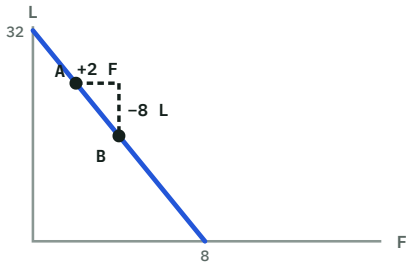
You can't have it all

Nora and Tomas, a fishing village, and the gains from specializing and trading.

1 Opportunity cost

every choice has one

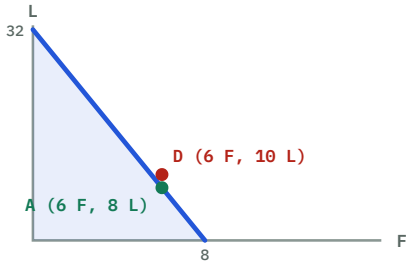
- **Scarcity** → time and resources are limited → every choice gives something up
- **Opportunity cost** → the value of the best alternative you give up
- Café shift $80 vs. a $30 concert → the concert really costs `$30 + $80 = $110`
- Nora: 4 loaves/hour or 1 fish/hour → 1 hour fishing costs her **4 loaves**
- Opportunity cost is measured in **what you give up**, not only in dollars



2 The frontier

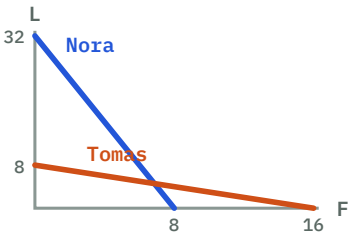
what is possible

- **Production possibilities frontier (PPF)** → the most of two goods you can make with fixed time · graphs: F = fish, L = loaves
- On the line → all hours used · below it → hours wasted · above it → out of reach
- Nora, 8 hours: `8 fish` or `32 loaves` · the line's **slope** (loaves lost per extra fish) **= opportunity cost**
- 6 fish take 6 hours → 2 hours left → at most `2 × 4 = 8` loaves, not 10



3 Comparative advantage

who should do what



Absolute advantage → doing more in the same time
Comparative advantage → giving up less to do it

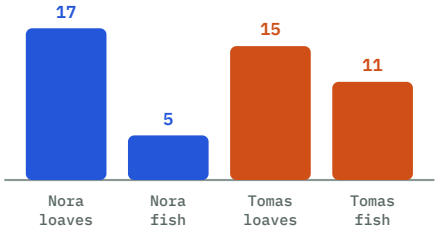
1 fish costs NORA 4 loaves, but only TOMAS 0.5 loaf. Tomas has the comparative advantage in fish; Nora, in bread.

Nobody has the lower opportunity cost in everything — everyone has a comparative advantage somewhere

4 Specialize and trade

both sides gain

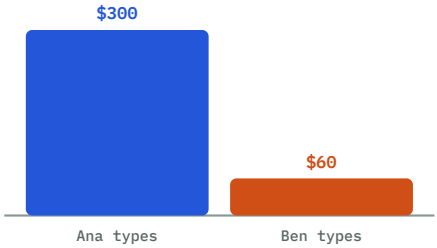
- **Specialization** → each person does the job with the lowest opportunity cost
- Full specialization: Nora bakes all day (`32 loaves`), Tomas fishes all day (`16 fish`)
- They swap at a price **between** the two opportunity costs: between 0.5 and 4 loaves per fish
- Example: Tomas gives 5 fish for 15 loaves → Nora ends with `17 loaves, 5 fish` ; Tomas with `15 loaves, 11 fish`
- Both end with more of both goods than working alone, half the day on each job (16/4 and 4/8)



5 Better at everything?

faster ≠ cheaper

- Ana types twice as fast as Ben, but Ana earns the firm $300/hour doing legal work
- Ana types the report: 1 hour → costs the firm `$300` of lost legal work
- Ben types the report: 2 hours × $30 → costs the firm only `$60`
- Ana has the **absolute** advantage in typing; Ben has the **comparative** advantage — trade follows comparative advantage



6 When does trade help?

the price matters

- A trade helps both sides only if its price sits **between** what each side would pay to make the good alone
- Fish price range that helps both Nora and Tomas: `0.5 – 4 loaves per fish`
- Bad deal: 20 loaves for 2 fish = `10 loaves/fish` — above Nora's own cost of 4, so she is better off fishing herself

