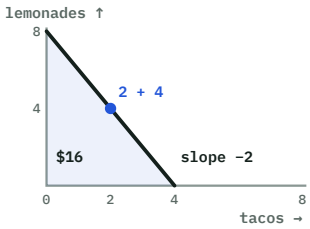
Where does your demand curve come from?

Nadia has $16 at the taco stand. The lunches worth the same to her form a curve; her best lunch is where that curve just touches her budget line. Change the taco price, find each new best lunch: the dots are her demand curve.

1 Budget line

what she can buy

- **Bundle** = a mix of goods (a lunch: tacos + lemonades) · **budget line** = every bundle that spends the whole budget $P_T \times t + P_L \times l = income$ (P = price, t = tacos, l = lemonades)
- Nadia: $16, taco $4, lemonade $2 ⇒ ends **4 tacos ↔ 8 lemonades** · below the line: money left · above: too dear
- **Slope** = price ratio $P_T \div P_L = 4 \div 2 = 2$ ⇒ 1 taco costs 2 lemonades = its **opportunity cost** (Micro Lesson 1)
- Practice · Omar $24, taco $6 ⇒ 4 tacos ↔ 12 lemonades · slope $6 \div 2 = 3$ · 1 + 9 = **$24** (on) · 2 + 4 = $20 (below) · 3 + 4 = $26 (above)



2 Indifference curve

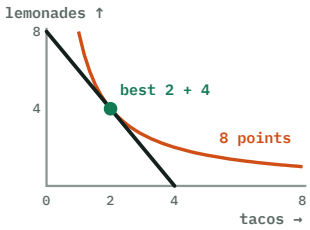
lunches worth the same

- Points = $tacos \times lemonades$ (made up, like the utils, points of satisfaction, of Micro 11: she likes a mix) · 2 + 4 = 8 points
- **Indifference curve** = all bundles with the **same points**, equally good · 8 points: 1 + 8 · 2 + 4 · 4 + 2 · higher curve = better
- **MRS** (marginal rate of substitution) = lemonades she would give up for 1 more taco, equally happy = **slope of her curve** · 1 + 6 → 2 + 3: gives up **3**, both 6 points
- Francis **Edgeworth**, Irish economist, *Mathematical Psychics*, **1881**: the first indifference curve

3 Best bundle

the curve just touches

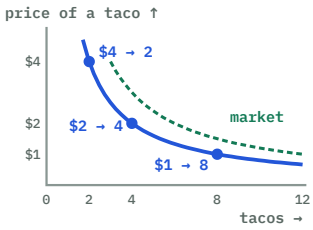
- **Best bundle** ⇒ the highest curve that still **touches** the line ⇒ slopes match $MRS = P_T \div P_L$ · Nadia **2 + 4 = 8** points
- Not best: 1 + 6 (6 points) · she would pay 3 lemonades for a taco, the stand asks 2 ⇒ **buy another taco**
- Same sentence as Micro 11's rule $MU_T \div P_T = MU_L \div P_L$ (MU = extra points of one more unit)
- Practice · Omar: points 0, 9, **12**, 9, 0 along his line ⇒ best **2 + 6** · 9-point curve **crosses** at 1 + 9 and 3 + 3 ⇒ better lunches between ⇒ never best



4 Demand curve

a chain of best bundles

- Taco price ↓ ⇒ line **swings out** from 8 lemonades · best: **$4 → 2 · $2 → 4 · $1 → 8** tacos (4 lemonades each time) · path of best bundles = **price-consumption curve**
- Tacos against price ⇒ her **demand curve** · spends $2 \times 4 = 4 \times 2 = 8 \times 1 = \$8$ on tacos at every price ⇒ the curve **bends** (a feature of the made-up rule; Micro 2's straight line is another simple model)
- Practice · Omar $24: $6 → 2 · $3 → 4 · $2 → 6 · $12 on tacos each time
- Alfred **Marshall**, English, *Principles of Economics*, **1890**: the demand curve · John **Hicks** and Roy **Allen**, British, **1934**: demand built from indifference curves



5 Market and shifts

idea 1 of 11

- **Market demand** = add every buyer's quantity **at the same price** (sideways) · Omar $8: 1, 2, 4 ⇒ market **3 · 6 · 12** at $4, $2, $1
- Own price changes ⇒ move **along** the curve · income, tastes, other prices ⇒ the curve **shifts** · Nadia $24 ⇒ 3 tacos at $4 (right) · $8 ⇒ 1 (left)
- Practice · Omar $24 → **$36** ⇒ 3, 6, 9 tacos at $6, $3, $2 ⇒ shift right · market at $4: $8 \div 4 + 12 \div 4 = 2 + 3 = 5$
- **Eleven ideas behind the curves** · `1 · A demand curve is a chain of best bundles` · next at university: a demand function with every price and income in it

Watch out: a change in the taco price is a move **along** the curve, never a shift · add buyers' **quantities** at one price, never their prices · a curve that **crosses** the budget line is not the best one