Tax, Tips, and Fees

Tax, tips, and fees are added to the price, so the total is more than 100 percent. One multiplier does it: 1.07 for 7 percent. Commission is a share of the sale, not added.

1 THE VOCABULARY
Words we use

Sales tax added to the price; multiply by 1 plus the rate.

Tip extra for service; build from 10 percent.

Fee a charge added on, like tax.

Commission the salesperson's share of a sale; not added.

- Watch out for these.
- Multiplying by 0.07 and calling it the total. That is the tax; the total is times 1.07.
- Adding commission to the customer's bill.
- Rounding in the middle. Round to the cent at the end.
- Forgetting that 10 percent of $35 is $3.50, not $3.5 dollars and 5 cents: write money to the cent.

2 THE METHOD
Add a percent on top

1. THE EXTRA price times the rate as a decimal: $40 times 0.07 is $2.80.
2. THE TOTAL price plus the extra, or price times 1 plus the rate: $40 times 1.07.
3. TIPS IN YOUR HEAD 10 percent by moving the decimal, then double, halve, or add.
4. COMMISSION sales times the rate. The customer does not pay it.

WHY 1.07

You pay 100 percent of the price plus 7 percent more, and 100 percent plus 7 percent is 107 percent. As a decimal that is 1.07, and multiplying by it is the unit rate for this relationship.



Elle, math-speak: A proportional relationship always multiplies by the same number, the unit rate.



Finn, plain English: Percent means out of 100. A percent is a unit rate for 100 instead of for 1: 30 percent means 30 for every 100.

3 FOUR PROBLEMS
Tax, tip, fee, commission

$40 × 0.07 = $2.80; $40 + $2.80 = $42.80 = $40 × 1.07	tax: 107 percent of the price
10% of $35 = $3.50; 20% = $7; total $42	tip: 10 percent, then double
10% of $24 = $2.40; 5% = $1.20; 15% = $3.60; total $27.60	tip: 10 percent plus half
$50 × 1.12 = $56	fee: added on
$1,200 × 0.05 = $60, customers still paid $1,200	commission: a share, not added

THE EXIT TICKET

Tip on $24 at 15 percent: $3.60. Total: $27.60.

SAY IT OUT LOUD

Added on, or a share of the sale?