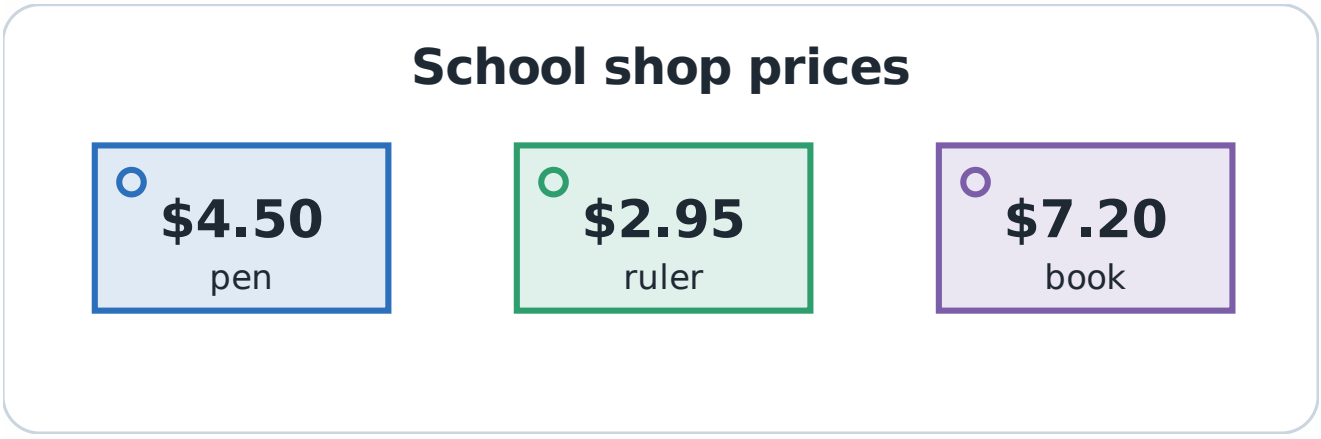
Extension & Challenge — Financial Mathematics

Part A — At the School Shop

Money problems use decimals to two places — the cents. Line up the decimal points when you add, and remember that change is what is left after subtracting the cost from the money handed over.

> **Worked example.** Buy a ruler (*$2.95*) and a pen (*$4.50*). Total: *$2.95 + $4.50 = $7.45*. Pay with *$10*; change is *$10.00 − $7.45 = $2.55*.



School-shop prices: pen $4.50, ruler $2.95, book $7.20.

1 You buy one pen, one ruler and one book. What is the total cost?

Answer: _____

2 You pay for the three items in question 1 with a *$20* note. How much change should you get?

3 A teacher buys 5 pens and 5 rulers for the class. What is the total? Show a quick way to work it out.

4 **Can you afford it?** You have $\$15$. You want 2 books. Can you afford them? If not, how much short are you?

5 **Best value.** Pens are also sold in a pack of 3 for $\$12$. Is the pack cheaper than buying 3 single pens? By how much per pen?

6 **Open challenge.** You have exactly $\$20$ and must spend as close to all of it as possible (without going over) on these three items. List what you would buy and the total.

Part B — Discounts, Profit & Budgets

Financial maths is full of percentages: discounts reduce a price, profit is the difference between cost and selling price, and a budget checks that spending does not beat the money available.

> To find 10% of an amount, divide by 10. Then 20% is double that, 5% is half, and 25% is a quarter of the whole.

Worked example. A $40 game is 15% off. 10% of 40 is 4; 5% is 2; so 15% is $6. Sale price: 40 − 6 = $34.

1 A jacket is $80. In a sale it is 25% off. Find the saving and the sale price.

2 A market stall buys oranges for $0.40 each and sells them for $0.70 each. What is the profit on one orange? On 50 oranges?

3 Sam earns $12 pocket money each week. He saves ¼ of it. How much does he save in 8 weeks?

4 **Budget.** You are given $50 to plan a class party. Drinks cost $18, snacks $22, decorations $7. Do you have enough? How much is left over or how much extra is needed?

5 **Compare deals.** Shop A offers "20% off $50". Shop B offers "$15 off $50". Which is the better deal, and by how much?

6 **Prove it.** A shop raises a $100 item by 10%, then later takes 10% off the new price. Is the final price back to $100? Explain what happens.