

### Problem 1: Quantity Pricing

- **Input:** quantity
  - **Process:**
    - $\text{unit\_price} \leftarrow 3.00$  if quantity  $\geq 1000$  else 5.00
    - $\text{extended} = \text{quantity} \times \text{unit\_price}$
    - $\text{tax} = 0.07 \times \text{extended}$
    - $\text{total} = \text{extended} + \text{tax}$
  - **Output:** quantity, unit\_price, extended, tax, total
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### Problem 2: Item A/B Pricing

- **Input:** item\_code, quantity
  - **Process:**
    - $\text{unit\_price} \leftarrow 10.00$  if item\_code == "A" else 20.00
    - $\text{extended} = \text{quantity} \times \text{unit\_price}$
  - **Output:** item\_code, unit\_price, extended
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### Problem 3: Book Order Shipping

- **Input:** books, cost\_per\_book
- **Process:**
  - $\text{order\_total} = \text{books} \times \text{cost\_per\_book}$
  - $\text{shipping} \leftarrow 0$  if order\_total  $> 50.00$  else 25

- **Output:** order\_total, shipping
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#### Problem 4: Appliance Warranty

- **Input:** name, cost
  - **Process:**
    - $\text{warranty} \leftarrow 0.10 \times \text{cost}$  if  $\text{cost} > 1000$  else  $0.05 \times \text{cost}$
    - $\text{total} = \text{cost} + \text{warranty}$
  - **Output:** name, cost, warranty, total
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#### Problem 5: Income Tax Calculation

- **Input:** last\_name, dependents, gross\_income
- **Process:**
  - $\text{agi} = \text{gross\_income} - (\text{dependents} \times 12000)$
  - $\text{rate} \leftarrow 0.20$  if  $\text{agi} > 50000$  else  $0.10$
  - $\text{tax} = \text{agi} \times \text{rate}$
  - if  $\text{tax} < 0$  then  $\text{tax} = 100$
- **Output:** last\_name, gross\_income, dependents, agi, tax