1. Complex Tax Calculation

A country has a progressive tax system:

- **Income ≤ $10,000** → No tax
- **$10,001 - $30,000** → 10% tax on the amount exceeding $10,000
- **$30,001 - $100,000** → 10% on $20,000 + 20% on amount exceeding $30,000
- **Income > $100,000** → 10% on $20,000 + 20% on $70,000 + 30% on amount exceeding $100,000

Question: Given an income amount, calculate the total tax to be paid.

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2. Parking Lot Fee System

A smart parking lot charges different rates based on the vehicle type and duration:

- **Car:**
  - First 2 hours → $5
  - Next 3 hours → $4 per hour
  - After 5 hours → $3 per hour
- **Truck:**
  - First 3 hours → $10
  - Next 5 hours → $7 per hour
  - After 8 hours → $5 per hour
- **Bike:**
  - First 1 hour → Free
  - Next 2 hours → $2 per hour
  - After 3 hours → $1 per hour

Question: Given a vehicle type and parking duration, calculate the total parking fee.

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3. Flight Ticket Discount System

An airline offers discounts based on the passenger's age, ticket type, and time of booking:

- **Children (≤12 years)** → 50% discount
- **Seniors (≥60 years)** → 30% discount
- **Adults (13-59 years)**:
  - Business Class → No discount
  - Economy Class:
    - Booked at least 30 days before departure → 20% discount
    - Last-minute booking (within 3 days) → No discount

Question: Given age, ticket type, and booking time, calculate the final price after applying discounts.

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4. Bank Loan Eligibility Check

A bank grants loans based on the following conditions:

- **Applicant must be employed or self-employed**
- **Minimum credit score required:**
  - **Home Loan** → 700
  - **Car Loan** → 650
  - **Personal Loan** → 600
- **Minimum salary required:**
  - **Home Loan** → $50,000
  - **Car Loan** → $30,000
  - **Personal Loan** → $20,000

Question: Given employment status, credit score, and salary, determine if a person is eligible for a loan and for which type.

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5. Smart Traffic Management System

A city uses an AI-based traffic system that controls signal timings based on vehicle density and emergency status:

- **High Traffic (>50 vehicles per minute) → Red light for 2 min**
- **Medium Traffic (20-50 vehicles per minute) → Red light for 1 min**
- **Low Traffic (<20 vehicles per minute) → Red light for 30 sec**
- **If an emergency vehicle (ambulance/fire truck) is detected → Instant Green Light**

Question: Given vehicle count and emergency status, determine the traffic light duration.
