**JS Problem Solving**

**(Solve all the problems given below)**

**1. ATM Withdrawal System**

**Scenario:**  
A customer wants to withdraw money from an ATM. Write a function atmWithdrawal(balance, amount, pin, enteredPin) that checks:

* If enteredPin matches pin, proceed. Otherwise, return "Incorrect PIN"
* If amount > balance, return "Insufficient Funds"
* If amount is a multiple of **100**, allow withdrawal, else return "Enter amount in multiples of 100"

**2. Online Shopping Discount & Free Shipping**

**Scenario:**  
An online store offers the following:

* **Discounts**:
  + 20% for orders above $1000
  + 10% for orders between $500 and $1000
  + No discount below $500
* **Free shipping** for orders above $50
* **Express shipping ($10)** for all orders below $50  
  Write a function calculateFinalAmount(orderAmount) that returns the final payable amount after discount and applicable shipping charges.

**3. Student Grading System with Extra Credit**

**Scenario:**  
A school assigns grades based on marks and awards **extra credit** if attendance is above 90%.

* **Grading:**
  + 90+ → "A"
  + 80-89 → "B"
  + 70-79 → "C"
  + 60-69 → "D"
  + Below 60 → "F"
* If **attendance is above 90%**, **add 5 extra marks**  
  Write a function calculateGrade(marks, attendance) that returns the student's final grade.

**4. Smart Traffic Light System**

**Scenario:**  
A smart traffic light changes signals based on traffic density:

* "Heavy Traffic" → **Green for 60 seconds**
* "Moderate Traffic" → **Green for 40 seconds**
* "Light Traffic" → **Green for 20 seconds**  
  Write a function trafficLightControl(density) that returns how long the green signal will stay on.

**5. Movie Ticket Pricing with Time and Age Discount**

**Scenario:**  
A movie theater offers tickets with dynamic pricing:

* **Standard price: $12**
* **Matinee show (before 5 PM)** → 20% discount
* **Senior citizens (above 60)** → 30% discount
* **Children (below 12)** → 40% discount  
  Write a function calculateTicketPrice(age, showTime) that returns the final ticket price.

**6. Job Application Filter**

**Scenario:**  
A company is hiring and requires candidates to meet the following conditions:

* **Age** must be **between 21 and 55**
* **Experience** must be at least **2 years**
* **Minimum qualification**: "Bachelor's Degree"  
  Write a function isEligibleForJob(age, experience, qualification) that returns whether the applicant is eligible.

**7. E-commerce Coupon Redemption**

**Scenario:**  
An e-commerce store offers coupon-based discounts:

* **Coupon "DISCOUNT10"** → 10% off for orders above $500
* **Coupon "FREESHIP"** → Free shipping for orders above $200
* **Both coupons cannot be used together**  
  Write a function applyCoupon(orderAmount, couponCode) that calculates the final price.

**8. Fitness Membership Plan**

**Scenario:**  
A gym offers different membership plans:

* **Basic ($20/month)** → Only gym access
* **Premium ($50/month)** → Gym + Personal Trainer
* **VIP ($80/month)** → Gym + Trainer + Diet Plan  
  Write a function choosePlan(planType, wantsTrainer, wantsDietPlan) that suggests the best membership.

**9. Electricity Bill Calculation with Peak Hours**

**Scenario:**  
An electricity board charges differently based on consumption and time:

* **Normal hours (8 AM - 8 PM)**
  + Below 100 units → $5 per unit
  + 100-300 units → $4 per unit
  + Above 300 units → $3 per unit
* **Peak hours (8 PM - 8 AM)** → Extra 10% charge on all rates  
  Write a function calculateElectricityBill(units, timeOfDay) that returns the total bill.

**10. Flight Ticket Booking System**

**Scenario:**  
A flight booking system applies the following rules:

* **Base fare:** $300
* **Additional charges:**
  + **Business class:** +$200
  + **First class:** +$500
  + **Luggage over 20kg:** +$50 per 10kg extra
* **Discounts:**
  + **Students** → 15% off
  + **Seniors (above 60 years old)** → 10% off  
    Write a function calculateFlightFare(classType, luggageWeight, isStudent, isSenior) that returns the final price.