1)

```javascript
// Task 1: Add Product to Cart Function
let cart = [];

function addToCart(name, price, quantity) {
  if (!name) {
    throw new Error("Product name is required.");
  }
  if (price <= 0 || typeof price !== "number") {
    throw new Error("Invalid product price.");
  }
  if (quantity <= 0 || !Number.isInteger(quantity)) {
    throw new Error("Invalid quantity.");
  }

  // If no errors, add the product to the cart
  cart.push({ name, price, quantity });
  console.log(`${name} has been added to the cart.`);
}

// Task 2: Checkout Function
function checkout() {
  if (cart.length === 0) {
    throw new Error("Cart is empty. Add items before checkout.");
  }
```

```javascript
  // If no errors, proceed with checkout
  console.log("Proceeding to checkout...");
  console.log(`Total items in the cart: ${cart.length}`);
}
try {
  addToCart("Laptop", 1200, 2);  // Adds successfully
  addToCart("", 30, 1);  // Should throw an error: "Product name is required."
  addToCart("Mouse", -15, 3);  // Should throw an error: "Invalid product price."
  addToCart("Keyboard", 50, "abc");  // Should throw an error: "Invalid quantity."


  checkout();  // If the cart is empty, it will throw an error: "Cart is empty."
} catch (error) {
  console.error(error.message);
}
```
2)
```javascript
function login(username, password) {
  if (!username) {
   throw new Error("Username is required.");
  }


  if (!password) {
   throw new Error("Password is required.");
```

```javascript
  }

  // Simulate checking if the username and password are valid
  if (!isValidCredentials(username, password)) {
    throw new Error("Invalid username or password.");
  }

  // Simulate successful login
  console.log("Login successful!");
}

// Assuming a function isValidCredentials() exists to validate credentials

try {
  login("user123", "password123");
  login("", "password456"); // Should throw an error: "Username is required."
  login("user456", ""); // Should throw an error: "Password is required."
  login("invalidUser", "invalidPassword"); // Should throw an error: "Invalid username or password."
} catch (error) {
  console.error(error.message);
}
```

```javascript
3) function processPayment(amount, cardNumber, expirationDate) {
  if (amount <= 0) {
    throw new Error("Invalid payment amount.");
  }

  if (!cardNumber || !isValidCreditCardNumber(cardNumber)) {
    throw new Error("Invalid card number.");
  }

  if (!expirationDate || isExpirationDatePast(expirationDate)) {
    throw new Error("Invalid expiration date.");
  }

  // Simulate processing the payment
  console.log("Payment processed successfully!");
}

// Assuming functions isValidCreditCardNumber() and
isExpirationDatePast() exist to validate card number and expiration date

try {
  processPayment(50.25, "1234-5678-9832-3456", "12/25");
  processPayment(-18, "invalidCardNumber", "05/22"); // Should throw
errors: "Invalid payment amount." and "Invalid card number"
  processPayment(100.75, "9076-5432-1498-7654", "01/2017"); //
Should throw an error: "Invalid expiration date."
```

```
} catch (error) {
 console.error(error.message);
}
```

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} catch (error) {
 console.error(error.message);
}
```