Drone Assignment - Casting & Compound Assignment Operators

Objective

Practice Java casting and compound assignment operators by simulating a drone flight with changing altitude, battery, and photo count.

Requirements

Initial Setup

Your program starts with these drone values:

- **Altitude**: 150.7 meters (double)
- **Battery**: 87.3% (double)
- **Photos**: 0 (int)

Part 1 – Casting

The drone's display screen can only show whole numbers.

1. Cast the altitude (double) into an `int` called `displayAltitude`
2. Cast the battery (double) into an `int` called `batteryRounded`
3. Print them to check your work (optional)

Part 2 – Compound Assignment Operators

Simulate changes during the flight using compound operators:

1. **Altitude**: Drone climbs 20 meters
2. **Battery**: Battery drains 15 percentage points (subtract 15 from battery value)
3. **Photos**: Drone takes 3 photos
4. **Altitude**: Drone descends to half its current altitude
5. **Photos**: Use modulo to calculate storage slots used on photos

Part 3 – Display Results

Display the final results with flexible wording, but must include:

- **Photos**: Show the final photo count
- **Storage slots used**: Show "Storage slots used: X out of 4" (exact phrase required)

Program Structure

```
// DO NOT CHANGE THE CLASS NAME, IT WILL BREAK THE AUTO GRADER
public class DroneAssignment {
```

```
    public static void main(String[] args) {
        // Initial drone values
        double altitude = 150.7;
        double battery = 87.3;
        int photos = 0;

        // TODO: Part 1 - Casting
        // Cast altitude (double) to int called displayAltitude
        // Cast battery (double) to int called batteryRounded
        // Print them to check your work (optional)

        // TODO: Part 2 - Compound Assignment Operators
        // Altitude: Drone climbs 20 meters
        // Battery: Battery drains 15%
        // Photos: Drone takes 3 photos
        // Altitude: Drone descends to half its current altitude
        // use modulo to calculate storage slots used on photos to
calculate storage slots used
        // Display "Photos: " + photos
        // Display "Storage slots used: " + photos + " out of 4"
    }
}
```

⚠ **Important**: Do not change the class name `DroneAssignment` as it will break the autograder!

Expected Output

Your program should display something like:

```
=== Drone Flight Simulation ===
Initial Status:
Altitude: 150.7 meters
Battery: 87.3%
Photos: 0

Display Altitude: 150
Battery Rounded: 87

After climbing 20m: 170
After battery drain: 72
After taking 3 photos: 3
After descending to half: 85
Photos: 3
Storage slots used: 3 out of 4
```