

Solutions to the 143 Assessment Exam

1. C Teukolsky, p. 50, #4
2. C Horowitz, p. 186, #4
3. A Horowitz, p. 185, #2
4. E Horowitz, p. 154, #22
5. B Horowitz, p. 154, #23
6. B Horowitz, p. 199, #33
7. B Horowitz, p. 186, #5
8. E Litvin, p. 211, #10
9. D Litvin, p. 211, #11
10. B Teukolsky, p. 554, #15

P1 Sample Solution

```
public static int numberOfCharacters(String[] a, char c) {
    int count = 0;
    for (int i = 0; i < a.length; i++) {
        for (int j = 0; j < a[i].length; j++) {
            // if (a[i].substring(j, j + 1).equals("" + c))
            if (a[i].charAt(j) == c) {
                count++;
            }
        }
    }
    return count;
}
```

// Java 1.5 solution

```
public static int numberOfCharacters(String[] a, char c) {
    int count = 0;
    for (String s : a) {
        for (char c : s.toCharArray()) {
            if (ch == c) {
                count++;
            }
        }
    }
    return count;
}
```

P2 Sample Solution

```
public class Stock {
    private int totalShares;
    private double totalCost;

    public Stock() {
        totalShares = 0;
        totalCost = 0.0;
    }

    public void purchase(int shares, double pricePerShare) {
        totalShares += shares;
        totalCost += shares * pricePerShare;
    }

    public double getProfit(double pricePerShare) {
        double marketValue = totalShares * pricePerShare;
        return marketValue - totalCost;
    }
}
```