Abbreviations:

NAP  - no answer provided
ECF  - error carried forward
OBOE - off by one error
BOD  - benefit of the doubt
GCE  - misunderstood question. Answer is way off base.
NN   - Not Necessary. The code was not required. Usually no points off for this.

Question 1:
A. 10 B. 10 C. 2 D. 0 E. 13 F. "UTCS21" G. "3UT21"
H. 0 I. 2.7 J 2.5

2 points per answer.
missing quotes was -1 for first instance

Question 2:
A: 6 6 3 1 12 8 12 A: 8 D: 20

2 points each
The question was altered so that method alpha returned an int after its println statement.

Question 3:
part 1: no output
part 2:
+11
++22

part 3:
+11111
++22222
+++33333
part 4:
+
++
+++ 

Question 4:
The runtime error in the first part is caused by a divide by 0.
The second part had several logic errors, but the one that causes the line of 1's in an infinite loops is that the inner for loop increments \( i \) instead of \( j \).
The five syntax errors are:

1. string not capitalized
2. variables cannot start with digits. (But they can contain digits after starting correctly.)
3. the int quarter can not be assigned a double
4. The statement \( \text{int } y = x * 3; \) will not compile because \( x \) has not be initialized.
It is not illegal to have the statement \( \text{int } x; \) and initialize \( x \) later.
5. four should be for.

Question 5:
Suggested solution:

```java
public static double gForce(double m1, double m2, double r)
{
    double g = 6.67E-11;
    return g * m1 * m2 / (r * r);
}
```

method header with return type of double, 1 point
3 parameters with correct data type, 2 points
G value correctly used, 1 point
calculation attempt, 2 points
calculation correct, 2 points
return correct, 2 points

It was okay to declare \( G \) as a class constant.
It was okay to use \( \text{Math.pow} \).

Some of the common problems were:
- no name fore method
- wrong value assigned to \( G \)
- using System.out.println. This was no specified.
- not squaring the distance or not squaring it correctly.

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Question 6:

Suggested solution:

```java
public static String getLastHalfRev(String org) {
    String result = "";
    for(int index = org.length() / 2; index < org.length(); index++)
    {   result = org.charAt(index) + result;
    }
    return result;
}
```

alternate solution using countdown loop

```java
public static String getLastHalfRev(String org) {
    String result = "";
    for(int index = org.length() - 1; index > org.length() / 2; index--)
    {   result += org.charAt(index);
    }
    return result;
}
```

method header with correct return type, 2 points
parameter of type String, 2 points
local variable that stores result initialized to "". 3 points
loop attempt, 3 points
loop correct bounds, 3 points
method class to length() and charAt() correct, 3 points
String concatenation correct, 3 points
return statement, 1 point

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Question 7:

Part 1, B and C are not true
Part 2, A, C, and D are true