

Answer Key — Week 5 Parsons Problems

For TAs only — do not distribute

Problem 1 — Double numbers

```
public class DoubleNumbers {
    public static void main(String[] args) {
        while (!StdIn.isEmpty()) {
            int number = StdIn.readInt();
            int doubled = number * 2;
            StdOut.println(doubled);
        }
    }
}
```

DISTRACTOR `while (StdIn.isEmpty()) {`

Missing the `!` negation — this loop body never executes because `StdIn.isEmpty()` is `false` when there is input.

DISTRACTOR `StdOut.println(number);`

Prints the original input — the program should only print the doubled value, not the number itself.

Problem 2 — Circle properties

```
public class Circle {
    public static void main(String[] args) {
        double r = Double.parseDouble(args[0]);
        double circumference = 2.0 * Math.PI * r;
        double area = Math.PI * r * r;
        StdOut.printf("Circumference: %.4f\n", circumference);
        StdOut.printf("Area: %.4f\n", area);
    }
}
```

DISTRACTOR `double circumference = Math.PI * r * r;`

Uses the area formula (πr^2) instead of $2\pi r$ — computes the wrong value for the circumference.

DISTRACTOR `double area = 2.0 * Math.PI * r;`

Uses the circumference formula ($2\pi r$) instead of πr^2 — computes the wrong value for the area.