1-2. What does the following line of code print and why:

```
System.out.println("    ___\n   ('v')\n  ((    ))\n-/-\"---\"--\n");
// 1234567890123456789012345678901234567890123456789012345678901
```

What is the value of each of the following expressions:

3. 1 – 2 + 3   **4.** 1 – (2 + 3)   **5.** (1 – 2) + 3   **6.** 1 – 2 * 3

7. 3 / 2 * 2   **8.** 2 * 3 / 2   **9.** 3 / Math.sqrt(4)

Use **BigDecimal** objects to calculate the following expressions (write Java code that does that):

10. 0.1 + 0.2   **11.** 4.35 * 100

Evaluate the following expressions:

12. true && ! true   **13.** false || true   **14.** !!false

Assuming n is an int variable with a value of 3 what do these expressions evaluate to:

15. ++n   **16.** n++   **17.** n < n++   **18.** ++n > n   **19.** n++ – n   **20.** n++ < n

What is the value of these expressions:

21. 1 + "2"   **22.** 1 + 2 + "3"   **23.** 1 + 2 + "3"   **24.** 1 + (2 + "3")

25. "3" + 0   **26.** '3' + 0   **27.** '3' + "2"   **28.** '3' – '2'

Assuming that a is a boolean variable what is the value of these expressions:

29. a && !a   **30.** a || !a **31.** a && false   **32.** a || false   **33.** true && a   **34.** true || a

Assuming that a is a boolean variable simplify these expressions:

35. a == false **36.** a != false **37.** a == true **38.** a != true **39.** a && true || false

Assuming `n` is an `int` variable what do these expressions evaluate/simplify to:

40. `n < 3 && n > 5`   **41.** `n > 3 || n < 5`   **42.** `n > 3 && n < 5`   **43.** `Math.abs(n - 2) > 0`

Evaluate the following expressions:

44. `"hoop".substring(2)`   **45.** `"hoop".substring(2, 3)`   **46.** `"hoop".charAt(2) - 'p'`

47. `"hoop".substring("pooh".length() - 1)`   **48.** `"\n\n\\\"".length()`

49. What does the following code snippet print:

```
int n = 3, m = 5;
while (n < m) {
  n = m - n;
  m = n - m;
  n = m + n;
  System.out.println( n + " , " + m );
}
```

50. What does the following code snippet print:

```
for (int i = 0; i < 3; i = i++) {
  System.out.println( i );
}
```

51. Simplify the following expression if `n` is an `int`eger and `b` is a boolean variable:

```
if (n < 10) { b = true; } else { b = n > 10; }
```

52. Rewrite the following `do` loop using a `while` loop:

```
int count = 0;
do {
  System.out.println( ++count );
} while (Math.random() < 0.75);
```

This part of the exam is written, closed-book, lasts 75 minutes. Please try to fit the answers next to each question on the preceding page but feel free to use this as scratch paper. In the end submit them both (feel free to take pics with your phone before that). You will receive them back (both) in lab. Lab is open-book but you can't write on these two pages any longer. In lab you will try to determine objectively what your grade for the written part is based on your answers: you will write a short report indicating for each question what the right answer is, and why, then how your answer relates to that. If your answer is correct you give yourself a point. If your answer is wrong you give yourself a 0 (zero). If your answer is partially correct determine how much in (0, 1) that is and give yourself that many points. Add them up divide by 0.52 and that's your score (out of 100). State it, so we can compare it with what my score is, later.