Answers and Solutions

Exam #5 ~ Multiple Choice

1. E	11. C	21. C	31. A
2. A	12. E	22. A	32. A
3. A	13. D	23. C	33. E
4. D	14. A	24. E	34. B
5. B	15. E	25. B	35. B
6. D	16. D	26. D	36. E
7. A	17. B	27. C	37. C
8. A	18. B	28. E	38. C
9. A	19. A	29. C	39. B
10. B	20. C	30. E	40. D

Notes:

1. `5*4/2 = (5*4)/2` evaluates to 10. `5/2*4 = (5/2)*4` evaluates to 8. The result is converted into a `double` at the end.

2. Strings are immutable; a method cannot change a `String` object.

3. Use a De Morgan's Law.

4. You might notice that `guess` implements Euclid's Algorithm for finding the greatest common divisor.

5. When `words` is created, its size is 0. Trying to access the first element in `words` raises an `IndexOutOfBoundsException`.

6. `d` is set to the smallest of `a` and `b`, here 12. Then, due to short-circuit evaluation, `%` is applied twice for `d` = 12, 6, 4, 3 and once for `d` = 11, 10, 9, 8, 7, 5.

7. Every third element from 3 to 48 is set to 0 — 16 elements. Every fifth element from 5 to 50 is set to 0 — 10 elements. The total is 10 + 16 = 26. But we counted the 15th, the 30th, and the 45th elements twice. 26 - 3 = 23.

8. The `fun` implementations in Options I and II are equivalent: both return `true` when `a >= b >= c`. This leaves us with Choices A and D. Options II and III are different, because II has `&&` and III has `||`.

9. `% 100` leaves the last 2 digits.

10. Array indices start from 0; need for `arr[i]` to be both positive and odd.

11. `n` remains greater than or equal to 2, until it is eventually reduced to either 0 or 1.