- 1. Create a matrix that can be used as an image, and place a red square in the center of the image.
- 2. Given an upper case letter, give its ASCII code.
- 3. Read an image from file, change one pixel, then write it back to a new file.
- 4. Is cd chmod rm cp mv . .. pwd
- 5. Given a char matrix message, encode it into an image matrix.
- 6. Find if two lists contain exactly the same elements in O(n+m) comparisons.
- 7. For a 2d matrix m, write a single expression that will change all values 120-129 inclusive to 42^{1} .
- 8. insertion sort, mergesort, merge, binsearch, linear search; O()
- 9. (3 pts) Write an expression using the range function to make a variable hold the list [2,3,4,5,6,7,8,9]
- 10. (3 pts) Write one expression that uses the variable you made in problem **??** to get the sublist containing only 3,4,5,6.
- 11. A _____ takes _____ space/memory/\$. You have _____ space/money/\$. How many _____ can you fit in _____ bytes/sq ft/\$?
- 12. convert from binary to decimal, decimal to binary, know powers of two and how they lead to enlightenment.
- 13. What does this recursive/iterative/bad/good function print?
- 14. Create a class and do things to it.
- 15. List fcns: reverse, remove, search, apply, accumulate
- 16. logical ops, short circuit
- 17. dictionaries

¹Give two reasons why this number is significant.

- 18. Use a mask to find the number of fives in a 2d matrix m.
- 19. What is false in Python?
- 20. Given three two digit binary numbers as uint8s, encode them at the ends of the three elements of a vector of three uint8s.
- 21. cd ls chmod cd mkdir . .. pwd cp mv rm
- 22. powers of two: calculate world peace given a train with 2^{17} cars, each of which holds 220,000 lbs of goodwill.
- 23. bitand bitor bitshift
- 24. python classes
- 25. O(), and O() of merge, mergesort, insertion, sort, binsearch, insertInOrder
- 26. Write a function to determine if two lists contain the same elements in O(n+m) comparisons.

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