

Name: _____

1. (1 pt.)

- **Read all material carefully.**
- *If in doubt whether something is allowed, ask, don't assume.*
- You may refer to your books, papers, and notes during this test.
- E-books may be used *subject to the restrictions* noted in class.
- Computers are not permitted, except when used strictly as e-books.
- Network access of any kind (cell, voice, text, data, ...) is not permitted.
- Write, and draw, carefully. Ambiguous or cryptic answers receive zero credit.
- Use class and textbook conventions for notation, algorithmic options, etc.

Write your name in the space provided above.

WAIT UNTIL INSTRUCTED TO CONTINUE TO REMAINING QUESTIONS.

Do not write on this page below this point.

Q	Full Score
1	1
2	14
3	25
total	40

2. (14 pts.) Using the textbooks's Figure 2.4 (page 40) as a model depict the operation of merge sort on an input array with the following elements (in index order): 3 1 4 5 9 5 1 7 2 9.

3. (25 pts.) Solve the following recurrence using each of the three methods described in Chapter 3 of the textbook:

$$T(n) = 3T(n/4) + 17n + 3$$

[additional space for earlier material]