

SE 4367, Software Testing

Homework #6, Equivalence Classes and Boundary Value Analysis

Given a program to calculate income tax based on the following marginal tax rates.

<i>Income</i>	<i>Tax</i>
$\text{Income} < \$10\text{K}$	no tax
$\$10\text{K} \leq \text{Income} < \20K	10%
$\$20\text{K} \leq \text{Income} < \30K	12%
$\$30\text{K} \leq \text{Income} < \40K	15%
$\text{Income} \geq \$40\text{K}$	20%

An example of using marginal tax rates: on an income of \$25K, you pay \$0 on the first \$10K, 10% for income from \$10-20K, and 12% for income from \$20-25K (in the middle of the \$20-\$30K range), i.e., $0 + 1K + 0.6K = \$1.6K$.

- What are the equivalence classes for *Income* in this problem?
- Create a test set generated from your equivalence classes.
- What are the boundaries for *Income* in this problem?
- Create a test set generated from (3-point) boundary value analysis.

Note: enter Income in dollar amounts (integer, no cents).

Grading Rubric

Each of the four parts is worth 25 points, with a proportional number of points allocated to each component of the answer.