

Myers's Famous Problem

- ▶ Read 3 integers taken to represent the lengths of the sides of a triangle. Decide if triangle is isosceles, equilateral or scalene.
- ▶ Math: A valid triangle must meet 2 conditions. No side may have a length of zero, and each side must be longer than the sum of all sides divided by 2. If s is this sum:
 - $s = (a + b + c) / 2$
 - then $s > a$, $s > b$, and $s > c$ must hold
 - if $a == b == c$ then equilateral, if 2 sides are equal then isosceles, else scalene
- ▶ Experienced programmers find 7.8 test cases on average
- ▶ Myers suggests 14, Binder: 65 wrt a Java implementation:
 - Figure 1.1 p.4: class hierarchy
 - Figure 1.3 p.6: Java interface
 - Table 1.1 p.7:
 - permutations, invalid and boundary inputs are important
 - one must exercise all ways of violating a condition
 - Tables 1.2 and 1.3: code (esp. drawing and inheritance) considerations

