

Century Tower

The Century Tower is a 157-foot-tall (48 m) carillon tower in the center of the University of Florida campus in Gainesville, Florida. Begun in 1953 by the Auchter Company to commemorate the 100th anniversary of the founding of UF's parent institution, Kingsbury Academy in Ocala, it also serves as a memorial for students and alumni who perished in both World War I and World War II. This fulfilled the original campus design of the university's first architect, William Augustus Edwards, which called for a Gothic bell tower as a focal point for the entire campus. At the time of the tower's completion in 1956, however, there was no money to buy bells for the carillon. An electronic bell system given by J.E. Davis and A.D. Davis, two of the Davis Brothers who controlled Winn-Dixie, was used until it finally broke down in 1975. In 1976, \$200,000 from accumulated student fees was used to buy the initial set of 49 bells. A Dutch bellfoundry, Royal Eijsbouts bell foundry designed, fabricated and installed the full carillon in 1979. In 2002, a major gift from the estate of Larry Allen Webb of St. Augustine, Florida, (a distant relative of President Dwight D. Eisenhower) made possible the addition of twelve trebles for a total of 61 bells, complete revision of the carillon playing action, and provision of an identical studio practice clavier in the adjacent University Auditorium with sound samples from ten major carillons throughout the world. The Century Tower Carillon of sixty-one bells was completed in its present form and dedicated on September 11, 2003. In 2008 the Century Tower became a contributing property in the University of Florida Campus Historic District which was added to the National Register of Historic Places on April 20, 1989.

Input

The input begins with a single positive integer $1 \leq T \leq 1500$ on a line by itself indicating the number of test cases to follow. For each test case, a time is given in the format HH:MM. Be aware that the time is 24 hour time format so 23:00 is a valid case.

Output

For each test case, output the angle between the hour hand and the minute hand on the Century Tower. Should the angle be larger than 180 degrees, output 360 - ANGLE.

Sample Input

Sample Output

5	7.5
03:15	90
03:00	0
00:00	5.5
23:59	180
06:00	