

Name: KEY

1.2 Quartiles and Percentiles

$n = 90$

30, 171, 184, 201, 212, 250, 265, 270, 272, 289,
305, 306, 322, 322, 336, 346, 351, 370, 390, 404,
409, 411, 436, 437, 439, 441, 444, 448, 451, 453,
470, 480, 482, 487, 494, 495, 499, 503, 514, 521,
522, 527, 548, 550, 559, 560, 570, 572, 574, 578,
585, 592, 592, 607, 616, 618, 621, 629, 637, 638,
640, 656, 668, 707, 709, 719, 737, 739, 752, 758,
766, 792, 792, 794, 802, 818, 830, 832, 843, 858,
860, 869, 918, 925, 953, 991, 1000, 1005, 1068, 1441

- (1) Calculate the first, second, and third quartiles.

Q1: Position = $.25(91) = 22.75$ Then Q1 is 423.5

Q2: Position = $.5(91) = 45.5$ Then Q2 (Median) is 559.5

Q3: Position = $.75(91) = 68.25$ Then Q3 is 745.5

- (2) Calculate the 90th percentile.

$.9(91) = 81.9$ So the 90th percentile is: 864.5

- (3) Think... Suppose the 90th observation 1441 was removed and replaced with the value 5000. Which of the following statistics would change? Why?

Sample Mean ✓

First Quartile

Median

Sample Standard Deviation ✓

- (4) The Median = 2nd Quartile = 50th Percentile