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MA 331 HW 1
"I pledge my honor that I have abided by the Stevens Honors System" - [redacted]

1) a) This type of variable is qualatative. More specifically it is ordinal because the risk class numbering has meaning.

b)

Risk class	1	2	3	4	5
absolute frequency	6	8	A	B	1
relative frequency	.222	C	.333	D	.037

A = 9
B = 3
C = .296
D = .111

$C = \frac{8}{27} = .296$ $\quad B = 6+8+9+B+1 = 27 \rightarrow 3$

$A = 9/27 = .333$ $\quad D = \frac{3}{27} = .111$

c) median - 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3 3 4 4 4 5 → 2

d) modal - 3

2) 15.1, 14.9, 18.0, 14.8, 15.2, 17.7, 15.0, 16.7, 18.4, 15.4, 15.1, 18.1, 19.4, 21.1

a) $\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i = \frac{1}{14}(234.9) = 16.8$

b) Q_1 $\quad$ Q_3

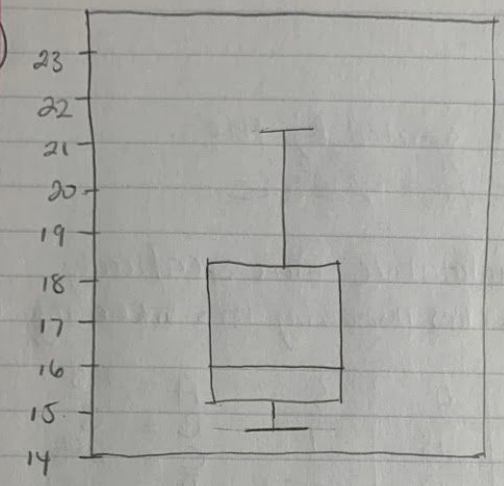
14.8, 14.9, 15.0, 15.1, 15.1, 15.2, 15.4, | 16.7, 17.7, 18.0, 18.1, 18.4, 19.4, 21.1

$Q_1 = 15.1$

c) variance $= S^2 = \frac{1}{n-1}\sum_{i=1}^{n}(x_i - \bar{x})^2 = 4.1$

St.dev $= S = \sqrt{S^2} = \sqrt{4.1} = 2.0$

d)



$q_1 = 15.1$

$q_2 = 16.05$

$q_3 = 18.1$

$IQR = 3$

There is evidence of asymmetry in the distribution. The pattern is that its skewed to the right with more values being bunched up at the lower end of the data.