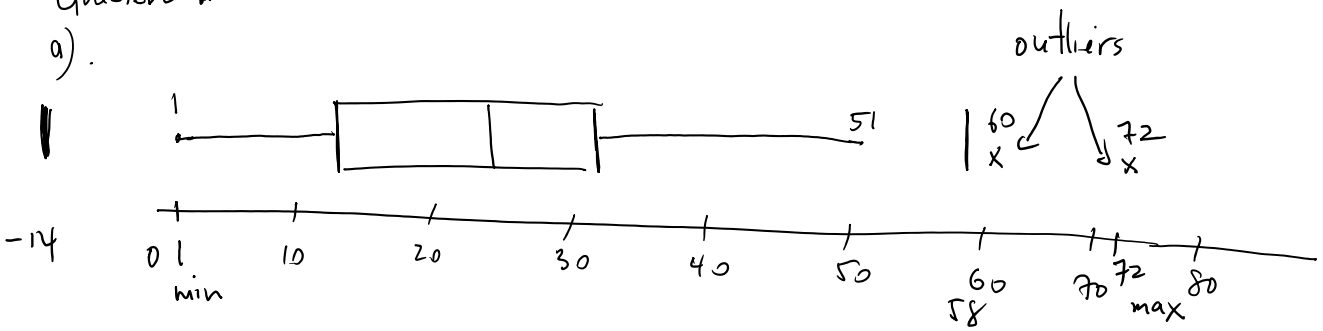
Star Problems. Midterm Review

Saturday, February 17, 2018 5:57 PM

Question 1.

a).




a) $Q1: i = \frac{25}{100} \times 30 = 7.5 \rightarrow 8^{th}$ position $\rightarrow (13)$

$Q3: i = \frac{75}{100} \times 30 = 22.5 \rightarrow 23^{rd}$ position $\rightarrow (31)$

$IQR = 31 - 13 = 18$

median: $i = \frac{50}{100} \times 30 = 15^{th} + 16^{th}$ position $\rightarrow (26.5)$

min = (1) max: (72)

Lower fence: $Q1 - 1.5IQR = 13 - 1.5 \times 18 = 13 - 27 = -14$

Upper fence: $Q3 + 1.5IQR = 31 + 1.5 \times 18 = 31 + 27 = 58$

Question 4. Goodyear.

$P(G)$ = good year $= 0.65$ $P(D|G) = 0.8$

$P(G^*)$ = not a good year $= 0.35$ $P(D|G^*) = 0.15$

a).

$P(G \cap D) = P(G) P(D|G) = 0.65 \times 0.8 = \boxed{0.52}$

b) $P(D) = P(D \cap G) + P(D \cap G^*) = P(G) P(D|G) + P(G^*) P(D|G^*)$

$= 0.52 + 0.35 \times 0.15$

$= 0.52 + 0.0525 = \boxed{0.57250}$

c) $P(G|D) = \frac{P(G \cap D)}{P(D)} = \frac{0.52}{0.57250} = \boxed{0.90830}$