

HOMEWORK (SIGN TEST)
BIostatistics (STAT:3510; BOGNAR)

1. The cholesterol levels in (10 year old) children has a distribution that is skewed to the right with population median Q_2 . A random sample of 12 children yielded the following cholesterol levels.

154 139 194 145 133 172 135 149 142 150 186 155

- (a) Test $H_0 : Q_2 = 180$ versus $H_a : Q_2 < 180$ at the $\alpha = 0.05$ significance level using the sign test. *You must find the test statistic and p -value, and state your decision and final conclusion.*
- (b) Test $H_0 : Q_2 = 140$ versus $H_a : Q_2 > 140$ at the $\alpha = 0.05$ significance level using the sign test. *You must find the test statistic and p -value, and state your decision and final conclusion.*
- (c) Test $H_0 : Q_2 = 160$ versus $H_a : Q_2 \neq 160$ at the $\alpha = 0.05$ significance level using the sign test. *You must find the test statistic and p -value, and state your decision and final conclusion.*