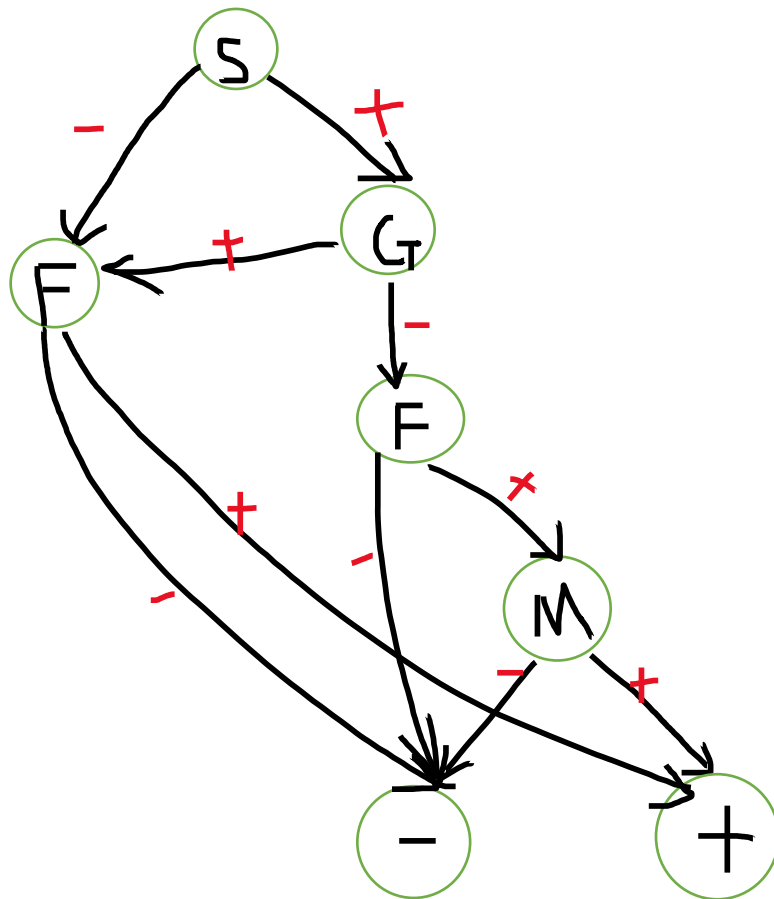


Xiaoja quan
Cs161

1. Prior probability of having the disease: $\Pr(\text{disease} = \text{true}) \geq 0.134$
False Positive for the test: $\Pr(\text{test} = \text{positive} \mid \text{disease} = \text{false}) = 0.002196$
False Negative for the test was not shown on the sensitive analysis.
- 2.



3.
 - (a) $\{S=0, G=0, F=1, M=0\}$
 $\{S=0, G=1, F=0, M=0\}$
 - (b) $\{F=1, M=1\}$.

(a) Prior marginal distribution for BMI and blood pressure:

	High	Not high
BMI	34.61%	65.40%
Blood pressure	45.77%	54.23%

(b) Posterior marginal distribution for 'over 60' assuming either high BMI or high blood pressure:

	Older	Younger
Over 60	65.76%	34.24%

(c) MAP for blood pressure and BMI:

$$P(\text{MAP}, e) = 0.1348$$

$$P(\text{MAP} | e) = 0.3371$$

(d) MPE given both SNPs are present and causal:

$$P(\text{MPE}, e) = 0.007812$$

$$P(\text{MPE} | e) = 0.144668$$