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Task 1

a) $A=B$. No oil is not a child of battery dead. Therefore battery dead & no oil are independent of each other.

both A & B include the battery dead=True, therefore $A=B$

b) $A=B$, same scenario as part a.

c) $A>B$, alternator broken & fanbelt broken are independent variables. A specificities less simultaneously desired outcomes than B, therefore $A>B$ is most likely.

d) $A<B$, If we know the car doesn't start then there's a greater chance the car has no gas, but If we don't know whether or not the car starts there's less of a chance that the car has no gas.

Task 2

a. $P(NC!) = P(A)*P(NC|A)+P(A) = 0.9712$

b. $P(!BA|BD) = P(!BA, BD)/P(BD)$

$$P(!BA, BD) = P(BD|!BA)*P(!BA)$$

$$P(BA, BD) = P(BD|BA)*P(BA)$$

$$\begin{aligned} P(BD) &= P(!BA, BD) + P(BA, BD) \\ &= 0.3182 \end{aligned}$$

Task 3

a. k, p, g, q, m

b. $P(A) * P(F|A)*P(K|F)+ P(A) * P(F|A)*P(!K|F)=0.64$

Task 4

a. $5*710$

b. $355 (5*10*7+5)$