HW2

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a) 0, minimum sum is 2

b) $\frac{4}{36}, (1,4), (4,1), (2,3), (3,2)$

c) $\frac{1}{36}, (6,6)$

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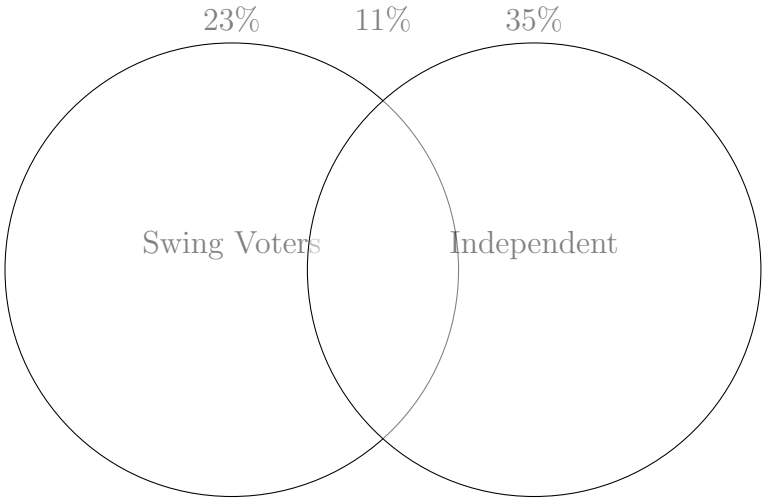
a) No. Since there is a percentage of the voters who are both Independent and swing voters, they are not mutually exclusive.

b)



c) 24%

d) 47%

e) 53%

f) They are not independent. $P(Ind \cap Swing) \neq P(Ind)P(Swing)$. $P(Ind \cap Swing) = .11$ and $P(Ind)P(Swing) = .08$

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a) Independent

b) Neither

c) No

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a) $100 - 15 - 28 - 25 = 32\%$

b) $32 + 25 = 57\%$

c) $100 - 32 = 68$

d) I assume that the probability of the two kids missing school are inindependent of each other. $.32 * .32 = .1024$

e) I make the same assumptions as above. $.68 * .68 = .4624$

f) Not entirely, since kids usually miss school due to sickness and if one of the kids is sick there is a high chance that the sickness could transfer to the other child.

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a) $\frac{15{,}327}{428{,}638} = .0357\%$

b) $\frac{141{,}699+44{,}837}{428{,}638} = .4351\%$

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a) No, but if it was independent you could.

bi) $.3 * .7 = .21$

bii) $.3 + .7 - .21 = .79$

biii) $\frac{.21}{.7} = .3$

c) No, $P(A \cap B)$ has to be .21 for it to be independent

d) $\frac{.1}{.7} = .1428$

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$\frac{.78}{.8} = .975$

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a) $.6 + .2 - .18 = .62\%$

b) $\frac{.18}{.2} = .9\%$

c) $\frac{.11}{.33} = .33\%$

d) It appears that belief is not independent since if that were true the probability of belief given that one is a liberal democrat should not differ from the probability of belief given that one is a convservative republican.

e) $\frac{.06}{.34} = .1764$

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$$\frac{.99*.03}{.99*.03+.02*.97} = .6048\%$$

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$$\frac{.997*.259}{.997*.259+.074*.741} = .8248$$