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Homework 2

1. Alistair will need 11 bits in his encryption key to ensure Liv does not steal his plans. Since the plans will save Liv 1024\$ if she can steal them, we can assume that if her cost to steal them is equal or greater than 1024\$, it will not be worth it for her to steal those plans. Therefore, Alistair will need an encryption key that will cost Liv 1024\$ or more to break. Since Liv's cost doubles for every bit added to the encryption key after the first bit, her cost will reach 1024\$ at 11 bits. Thus, Alistair's encryption key should be 11 bits.
2. Felony Carl should hire Momakase to protect his file. If Carl were to not hire security, he would lose 200\$ and that is the best case scenario. Therefore if he already has 200\$ to lose at best, he should spend that on protection. He should choose Momakase because she has the best quality for her services. Per 10\$, Big Hero's chance to steal the file increases 0.5% for Momakase, whereas with Globby it would be 4%. If Carl's 200\$ are in jeopardy, he might as well spend it on the best security possible.