Directions: Please answer the following questions and make sure your answer are legible. If you don’t show work and/or I can’t follow it, I won’t give partial credit. You may use a calculator (not the calculator function on other technology) and the Formula Sheet that I provide you, nothing else. Good Luck.

1. (5 points) Elijah is starting a new job, and his first paycheck will be for $1,200, however he won’t get this paycheck for a while. However, he needs to borrow money today (to pay bills, eat, etc). He finds a simple discount loan where he can get $1179.29 today, and the simple discount rate is 18%. When is Elijah expecting his paycheck?

\[ D = M \cdot d \cdot T \]
\[ D = 1200 \cdot 0.18 \cdot 1 \]
\[ M = 1200 \]
\[ d = 0.18 \]
\[ T = ? 

\[ \frac{20.71}{1200 \cdot 0.18} = T \]
\[ T = \frac{20.71}{216} \approx 0.1 \text{months or about 34 days} \]

2. The Hershey company needs to borrow money for extra raw materials to make enough Halloween candy. They will be able to repay $300,000 in 2 months, and find a simple discount loan with a simple discount rate of 9.5%.

(a) (8 points) Find the equivalent simple interest for this discount loan.

(b) (2 points) The Hershey company has a second option, they can borrow money today at a simple interest rate of 9.6%.

Which should the Hershey Company chose (Option 1, the simple discount loan, or Option 2, the regular loan)? you must explain/justify your choice.

\[ I = PRt \]
\[ I = 4750 \]
\[ P = 300,000 \]
\[ R = 0.095 \]
\[ T = \frac{2}{12} \]

\[ 4750 = 295,250 \cdot R \cdot \left( \frac{2}{12} \right) \]

\[ \frac{4750}{295,250 \cdot \left( \frac{2}{12} \right)} = R \]

\[ I = \text{equivalent simple interest} \]

\[ \frac{4750}{295,250 \cdot \left( \frac{2}{12} \right)} = R \]

\[ \text{Option sim rate 9.65%} \]

\[ \text{b) company sim int 9.65% & 9.6%} \]

\[ \text{the borrower Hershey chooses the line} \]