Mini Quiz 7

Name: _____

Kerberos: _____

Consider the following grammar:

```
E ::= E + T | T
T ::= T * F | F
F ::= (E) | x
```

Q1: What is in `I = Closure({T ::= T * • F})`?

$$T \rightarrow T * \circ F$$

$$F \rightarrow \circ (E)$$

$$F \rightarrow \circ x$$

Q2: What is in `Goto(I, F)`?

$$: \{T \rightarrow T * F \circ\}$$

Note: Algorithm for Closure(I):

- $i \in I \Rightarrow i \in Closure(I)$
- If $A ::= \alpha \bullet B\beta \in Closure(I)$ and $B ::= \bullet\gamma$ is in the grammar, then $B ::= \bullet\gamma \in Closure(I)$

Note: algorithm for Goto(I, X):

$Goto(I, X) ::= Closure(\{A ::= \alpha X \bullet \beta \mid A ::= \alpha \bullet X\beta \in I\})$

(for fun) Q3: What is the fixed point of $f(x) = \frac{1}{2}(\frac{2}{x} + x)$ starting at x=1?

sqrt(2)