Evaluate the given Java expression given the State Vector $(a,k) = (3,2)$ by using its Expression Tree.
The Java expression: \( a \times 3 + 7 / k \)
has the tree shown below:

```
      +
     /   
   *    /
  a    7
  \    /
   \  k
```
To this tree we add ONE value box next to each operator node
Then we Analyze the State Vector

(a,k) = (3,2)

Means:

a = 3
and
k = 2

And place the values for each variable just below (any) copies of the variable in the tree.
a * 3 + 7 / k

State Vector
\[(a, k) = (3, 2)\]

Begin with nodes at the BOTTOM.
Only work a node whose LEGS have ALREADY been evaluated.
a * 3 + 7 / k

State Vector
(a,k) = (3,2)

OOPS!
SEE NEXT PAGE
The previous page seems to have made a mistake. After all, \( 7/2 \) should be \( 3.5 \) RIGHT?

NOT IN JAVA

In JAVA, \( 7/2 \) is just \( 3 \)

This is called **INTEGER DIVISION**.

It is division without the decimal point.

As another example, \( 15/4 \) is just \( 3 \) and NOT \( 3.75 \)

The .75 is JUST **THROWN AWAY** (NO ROUNDING)
\[
a * 3 + 7 / k
\]

State Vector
\[
(a,k) = (3,2)
\]
\[ a \times 3 + \frac{5}{k} \]

State Vector
\[(a,k) = (3,2)\]

Label Nodes #1, #2, #3
BE CAREFUL to use the # sign
DO NOT CONFUSE the numbers in boxes with the node label numbers.
a * 3 + 5 / k  

State Vector 
(a,k) = (3,2) 

Place Tree information into a Table as expected by Mentor