

$P = ['?' , 'a' , 'my' , 'name' , 'is' , '?' , 'name']$, $I = ['Hello' , 'my' , 'name' , 'is' , 'Asif' , 'Ali' , 'Khan']$, $B = \text{None}$

$SV = a$, $SP = ['my' , 'name' , 'is' , '?' , 'name']$, $SI = ['Hello' , 'my' , 'name' , 'is' , 'Asif' , 'Ali' , 'Khan']$.

$S_B = \text{None}$

$P = ['my' , 'name' , 'is' , '?' , 'name']$, $I = ['my' , 'name' , 'is' , 'Asif' , 'Ali' , 'Khan']$, $B = \{ 'a' : ['Hello'] \}$

~~Ready~~ $P = my$, $I = my$, $B = \{ 'a' : ['Hello'] \}$

$P = ['name' , 'is' , '?' , 'name']$, $I = [name , 'is' , 'Asif' , 'Ali' , 'Khan']$
 $B = \{ 'a' : ['Hello'] \}$

$P = name$, $I = name$, $B = \{ 'a' : ['Hello'] \}$

$P = \{ 'is', '?' + \text{name} \}$, $I = \{ 'is', 'Asif', 'Ali', 'Khan' \}$,

$B = \{ 'a': ['Hello'] \}$

$P = is$, $I = is$, $B = \{ 'a': ['Hello'] \}$

$P = '?' + \text{name}$, $I = \{ 'Asif', 'Ali', 'Khan' \}$,

$B = \{ 'a': ['Hello'] \}$

$SV = \text{name} \rightarrow SP = []$, $SI = \{ 'Asif', 'Ali', 'Khan' \}$

P-

$P = []$, $I = []$, $B = \{ 'a': ['Hello'], 'name': \{ 'Asif', 'Ali', 'Khan' \} \}$

Final output.

$B = \{ 'a': ['Hello'], 'name': \{ 'Asif', 'Ali', 'Khan' \} \}$

Q No 2

Sol:-

input : ['Fran', 'age', 'Divided', 'by', 'Robin', 'height', 'is', 'one', 'half', 'of', 'Kelly', 'IO']

Rule : ['?x a', 'is', '?x b'], ['a' '=', 'b']

Binding : { 'a' : ['Fran', 'age', 'Divided', 'by', 'Robin', 'height'] }
 { 'b' : ['one', 'half', 'of', 'Kelly', 'IO'] }

input : ['Fran', 'age', 'divided', 'by', 'Robin', 'height']

Rule : ['?x a', 'divided by', '?x b'], ['?a', '?b']

Binding : { 'a' : ['Fran', 'age'] },
 { 'b' : ['Robin', 'height'] }

input : ['Fran', 'age']

output : ['Fran']

input : ['Robin', 'height']

output : ['Robin']

output : ['Fran', '1', 'Robin']

input : ['one', 'half', 'of', 'Kelly', 'IO']

Rule : ['(one)', 'half', '?x a'], ['(Kelly)', '?a'], ['1', '2']

Binding : { 'a' : ['Kelly', 'IO'] }

input : ['Kelly', 'IO']

output : ['Kelly']

output : ['Kelly', '1', '2']

output : ['Fran', '1', 'Robin', '=', 'Kelly', '1', '2']

input: ['Kelly', 'is', 'mines', '30', 'height']
Rule: [?x a], [=], (?x b), [(?a), (=), (?b)]
Bindings: { 'a': ['Kelly', 'is', 'mines', '30'],
 'b': ['Robin', 'height'] }

input: ['Kelly', 'is', 'mines', '30']
Rule: [?x a], [=], (?x b), [(?a), (=), (?b)]
Bindings: { 'a': ['Kelly', 'is'],
 'b': ['30'] }

input: ['Kelly', 'is']
output: ['Kelly']
output: ['Kelly', '=', '30']

input: ['Robin', 'height']
output: ['Robin']
output: ['Kelly', '=', '30'], [=], ['Robin']

input: ['Robin', 'is', '4', 'feet', 'tall']
Rule: [?x a], [=], (?x b), [(?a), (=), (?b)]
Bindings: { 'a': ['Robin'], 'b': ['4', 'feet', 'tall'] }

input: ['Robin']
output: ['Robin']
input: ['4', 'feet', 'tall']
output: ['4']
output: ['Robin'], [=], ['4']

input $['\text{how}', '\text{old}', 'is', '\text{Fran}']$
 Rule $(['?x\alpha'], ?S), ('?x\beta'), [?a, =, ?b]$
 Bindings $\{ ?a : ['\text{how}', '\text{old}'], ?b : ['\text{Fran}] \}$

input $['\text{how}', '\text{old}']$
 output $['\text{how}']$
 input $['\text{Fran}']$
 output $['\text{Fran}']$
 output $['\text{how}', '=' , '\text{Fran}']$

Out of Translate to Expression Module

Unsolved Equation First Call

$$1. (\text{Fran}/\text{robin}) = (\text{kelly}/2)$$

$$2. (\text{kelly} - 30) = \text{Robin}$$

$$3. \text{Robin} = 4$$

$$4. \text{how} = \text{Fran}$$

Solved Equation

selected $\rightarrow \text{robin} = 4$

Isolated $\rightarrow \text{robin} = 4$

Solve Arithmetically $\rightarrow \text{robin} = 4$

Substitution and recursive call \oplus

Second call

Unsolved Equation

$$\begin{aligned} \text{Fran}/4 &= \text{kelly}/2 \\ (\text{kelly}-30) &= \text{Robin}/4 \end{aligned}$$

Robin how = Fran

]

Solved Equation

$$\text{Robin} = 4$$

]

$$\text{selected} \rightarrow (\text{kelly} - 30) = 4$$

$$\text{isolated} \rightarrow \text{kelly} = 4 + 30$$

$$\text{Solve Arithmetic} \rightarrow \text{kelly} = 34$$

Substitution and Recursive cell

Unsolved Equation Third cell

$$(\text{Fran}/4) = (34/2)$$

$$34 = 300 =$$

how = Fran

]

Solved Equation

$$(\text{Robin} = 4),$$

$$(\text{kelly} = 34)$$

]

$$\text{selected equation} \rightarrow (\text{Fran}/4) = (34/2)$$

$$\text{isolated} \rightarrow \text{Fran} \cdot \text{Fran} = (34/2) * 4$$

$$\text{Solve Arithmetic} \rightarrow \text{Fran} = 68.0$$

Substitution and Recursive cell =

Unsolved Equation Fourth cell

]

$$\text{how} = 68.0$$

]

Solved Equation

$$\text{Robin} = 4$$

$$\text{kelly} = 34$$

$$\text{Fran} = 68.0$$

]

$$\text{selected} \rightarrow \text{how} = 68.0$$

$$\text{isolated} \rightarrow \text{how} = 68.0$$

$$\text{Solve Arithmetic} \rightarrow \text{how} = 68.0$$

Substitution and Recursive cell

Fifth Wall

unsolved Equation

[
]

Solve Equation

[

robin = 4

kelly = 34

Fron = 68.0

how = 68.0

]
]