

$$\textcircled{+} \quad \text{sub} = ? \rightarrow 2 - 3 = -1$$

$$2 + (-3) = -1$$

these
are
same thing

A) $\frac{\text{value}(2) - \text{value}(3)}{\text{self} \quad \text{other}} \rightarrow \approx \text{value}(2) + (-\text{value}(3))$

value. sub(value)

$$\text{value}(2) + (-\text{value}(3))$$

↗
 $\text{value.neg}()$
 ↗
 $\text{value.mul}(-1)$
 ↓
 int

$$\text{value}(2) + \text{value}(-3) \Rightarrow \text{value}(-1)$$

So, children of $\text{value}(2) - \text{value}(3)$

$((2, -3), +)$

→ for understanding

$$\text{B) } \frac{\text{value}(2.0)}{\text{value}} - \frac{3.0}{\text{float}} \Rightarrow \frac{\text{value}. \text{sub}(\text{float})}{\text{self}} \text{ other}$$

$$\frac{\text{value}(2.0)}{\text{self}} + \frac{(-3.0)}{\text{other}}$$

$$\text{value}. \text{add}(\text{float}) \Rightarrow \text{com. float} \rightarrow \text{value}$$

$$\Rightarrow \boxed{\text{value}(-1.0), (2, -3), (+)}$$

$$\text{c) } \frac{2.0}{\text{self. value}(3.0)} - \frac{3.0}{\text{float}} \Rightarrow \text{float. sub}(\text{value})$$

(err, as float do not have any sub funⁿ)

$$3.0 \leftarrow \frac{\text{Value. sub}(\text{float})}{\text{self}} \rightarrow 2.0$$

```
def sub(self, other):
    return self + (-other)
```

float
value.

$\Rightarrow \text{float}.\text{value}(3.0)$

$\Rightarrow \text{float}.\text{Sub}(\text{value}) \rightarrow$

$\Rightarrow \text{value}.\text{Sub}(\text{float}) \Rightarrow \frac{\text{Other} + (-\text{Self})}{\text{float}}$

$\Rightarrow \text{float}.\text{add}(\text{value}.\text{neg}()) \rightarrow \underline{\text{err}}$

$\Rightarrow \text{value}.\text{mul}(\text{float}) \rightarrow -1$

$\Rightarrow \text{value}(-3.0) \Rightarrow (\text{POV} = (3, -1), \neq)$

$\Rightarrow \Rightarrow \text{float}.\text{add}(\text{value}) \rightarrow \text{err}$

$\Rightarrow \text{value}.\text{add}(\text{float}) \rightarrow 2.0$

$\Rightarrow \text{value}(-3.0) + \text{value}(2.0)$

$\Rightarrow \boxed{\text{value}(-1.0)} \Rightarrow (\text{POV} = (-3, 2), +)$

$$a * b \Rightarrow a * \left(\frac{1}{b}\right) = a * (b^{-1}) = \underline{\underline{a * (b^{-1})}}$$

(A) $\Rightarrow \frac{\text{value}(2.0)}{\text{value}(3.0)} = \text{value}(2) * \underline{\underline{(\text{value}(3.0))^{-1}}}$

$$\Rightarrow (\text{value}(3.0))^{-1}$$

$$\Rightarrow \boxed{\text{value}(0.34)} ((3.0), *)^{-1}$$

$$\Rightarrow \text{value}(2) * \text{value}(0.34)$$

$$\Rightarrow \boxed{\text{value}(0.68)} ((2, 0.34), *)$$

B) $\Rightarrow \frac{\text{value}(2.0)}{3.0} = \frac{\text{value_div}(\text{float})}{\frac{\text{self}}{other}}$

$$= \text{self} * (\text{other}^{-1})$$

$$= \text{value}(2.0) * (3^{-1})$$

$$= \text{value}(2.0) * (0.34)$$

$$= \text{value_mul}(\text{float}) \rightarrow \text{convert to value}$$

$$= \text{value}(0.68) \rightarrow (2.034), (*)$$

2.0 \Rightarrow float, div(value) (exp),
value(3.0) $\xrightarrow{\text{Self}}$ other float do not
have div)

value. div (float)
Self $\xrightarrow{\text{other}}$

$$= \underline{\underline{\text{Self}}} * (\underline{\underline{\text{other}}}^{-1})$$

$$= \underline{\underline{\text{value}(3.0)}} * (\underline{\underline{2}}^{-1})$$

This is

way

$$\Rightarrow \underline{\underline{\text{other}}} * (\underline{\underline{\text{Self}}} * \cancel{\cancel{x}}^{-1})$$

$$\Rightarrow \underline{\underline{\text{Value}. \text{pow} (-1)}} \Rightarrow \underline{\underline{\text{value}(0.34)}} / (\underline{\underline{-3.0}}) (\cancel{\cancel{x}}^{-1})$$

$$\Rightarrow \underline{\underline{\text{other}}} \underline{\underline{\text{value}(0.34)}}$$

$$\Rightarrow \underline{\underline{\text{float}. \text{mul}(\text{value})}} (\text{exp.})$$

$$\Rightarrow \underline{\underline{\text{value}. \text{mul}(\text{float})}} \xrightarrow{\text{Self}} 2.0$$

0.34

$$= 0.34 * 2.0 = 0.68 \quad (2, 0.34) \cancel{*}$$