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$$1. (6-3) * (1+8) - 2 * (4+2)$$

a. Postfix

Stack	Curr	Char
1 (-)		63
2 +		63 - 18
3 *	2 -	63 - 18 +
4 -	4 *	63 - 18 + * 2
5 - * (+)		63 - 18 + * 2 4 2
6 - *		63 - 18 + * 2 4 2 +
7		<u>63 - 18 + * 2 4 2 + * -</u>

b. Prefix

$$\text{Reverse} :) 2 + 4 (* 2 -) 8 + 1 (*) 3 - 6 ($$

Stack	Curr	Char
1) + (24
2 *	-	24 + 2
3 -) + (24 + 2 * 8
4 -	*	24 + 2 * 8 +
5 - *) - (24 + 2 * 8 + 36
6 - *		24 + 2 * 8 + 36 -
7		24 + 2 * 8 + 36 - * -

$$\text{Reverse} : \underline{- * - 63 + 18 * 2 + 42}$$

$$c. \text{Postfix} : 63 - 18 + * 242 + * -$$

$$\text{Prefix} : - * - 63 + 18 * 2 + 42$$

$$1. (6-3) 18 + * 242 + * -$$

$$1. - * - 63 + 18 * 2 (4+2)$$

$$2. ((6-3) (1+8)) * 242 + * -$$

$$2. - * - 63 + 18 2 * (4+2)$$

$$3. (6-3) * (1+8) 242 + * -$$

$$3. - * - 63 (1+8) 2 * (4+2)$$

$$4. (6-3) * (1+8) 2 (4+2) * -$$

$$4. - * (6-3) (1+8) 2 * (4+2)$$

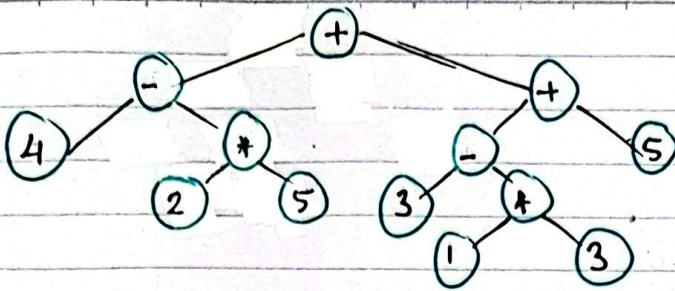
$$5. ((6-3) * (1+8)) 2 * (4+2) -$$

$$5. - ((6-3) * (1+8)) 2 * (4+2)$$

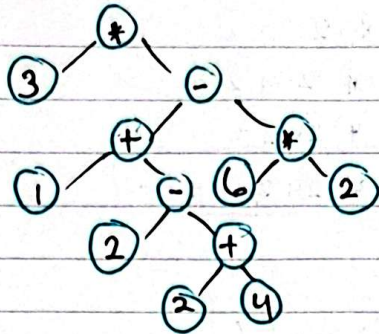
$$6. (6-3) * (1+8) - 2 * (4+2) = \underline{15}$$

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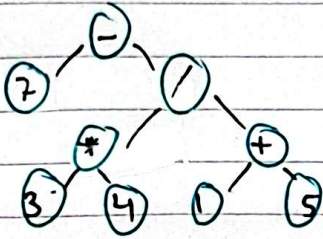
2. a.



b.



c.

d. Inorder : $((a + b) * c) - ((d - e) / f) + ((g * h) - i)$ e. Preorder : $-- + a - * bcd / e + fg h$ f. Postorder : $ab / c + d / e * fg + h - -$

3. - Input \rightarrow Hash Code

$$\textcircled{1} \text{ pineapple} \rightarrow 112 * 105 * 110 * 101 * 97 * 112 * 109 * 101$$

45

$$\hookrightarrow 15.483.041 \boxed{109.043.200} \rightarrow \text{len} = 17$$

$$\hookrightarrow 1 \% 200 = \underline{1 \text{ (Hash)}}$$

$$\textcircled{2} \text{ papaya} \rightarrow 112 * 97 * 112 * 97 * 121 * 97$$

32

$$\hookrightarrow 1385.27 \boxed{6.983.552} \rightarrow \text{len} = 13$$

$$\hookrightarrow 6 \% 200 = \underline{6 \text{ (Hash)}}$$

$$\textcircled{3} \text{ banana} \rightarrow 98 * 97 * 110 * 97 * 110 * 97$$

12

$$\hookrightarrow 1.082.24 \boxed{7.643.400} \rightarrow \text{len} = 13$$

$$\hookrightarrow 7 \% 200 = \underline{7 \text{ (Hash)}}$$

$$\textcircled{4} \text{ coconut} \rightarrow 99 * 111 * 99 * 111 * 110 * 117 * 116$$

67

$$\hookrightarrow 180.282.2 \boxed{11.003.320} \rightarrow \text{len} = 15$$

$$\hookrightarrow 1 \% 200 = \underline{1 \text{ (Hash)}}$$

$$\hookrightarrow (1+1) \% 200 = \underline{2 \text{ (Hash)}}$$

#1 | pineapple - 45

#2 | coconut - 67

...

#6 | papaya - 32

#7 | banana - 12

...

...

...

...

...

#200 | Null