

**Home Task**

1. Write an algorithm to convert an infix expression to postfix and infix to prefix

| INPUT CHARACTER | STACK | POSTFIX EXPRESSION |
|-----------------|-------|--------------------|
| A               | Empty | A                  |
| *               | *     | A                  |
| B               | *     | A B                |
| –               | –     | A B *              |
| (               | – (   | A B *              |
| C               | – (   | A B * C            |
| +               | – ( + | A B * C            |
| D               | – ( + | A B * C D          |
| )               | –     | A B * C D +        |
| +               | +     | A B * C D + –      |
| E               | +     | A B * C D + – E    |
| End of Input    | Empty | A B * C D + – E +  |

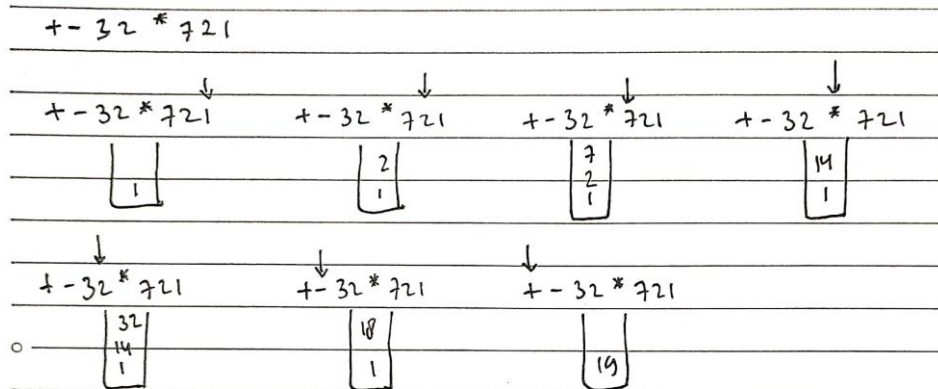
**POSTFIX EXPRESSION : - A B \* C D + – E +**

| INPUT CHARACTER | STACK | EXPRESSION  |
|-----------------|-------|-------------|
| F               |       | F           |
| ^               | ^     | F           |
| )               | ^)    | FE          |
| E               | ^)    | FE          |
| –               | ^)-   | FE          |
| D               | ^)-   | FED         |
| (               | ^)-   | FED-        |
| –               | –     | FED-^       |
| C               | –     | FED-^C      |
| +               | +     | FED-^C-     |
| )               | +) )  | FED-^C-     |
| B               | +) )  | FED-^C-B    |
| +               | +) +  | FED-^C-B    |
| A               | +) +  | FED-^C-BA   |
| (               | +     | FED-^C-BA+  |
|                 |       | FED-^C-BA++ |

**PREFIX EXPRESSION : ++AB-C^ -DEF**

2. Write an algorithm to evaluate a postfix and a prefix expression

a) Prefix



b) Postfix

