

## Assignment

19D5T003

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\* Infix to Postfix:

Ans 1)  $A + B * (C \wedge D * E) - F$

→ Questions 1 and 7 are same.

Input String	Stack	Output
A+B*(C^D^E)-F		A
A+B*(C^D^E)-F	+	A
A+B*(C^D^E)-F	+	AB
A+B*(C^D^E)-F	+*	AB
A+B*(C^D^E)-F	+*(	AB
A+B*(C^D^E)-F	+*(	ABC
A+B*(C^D^E)-F	+*(^	ABC
A+B*(C^D^E)-F	+*(^	ABCD
A+B*(C^D^E)-F	+*(^*	ABCD^
A+B*(C^D^E)-F	+*(^*	ABCD^E
A+B*(C^D^E)-F	+*(^*	ABCD^E*
A+B*(C^D^E)-F	-	ABCD^E**+
A+B*(C^D^E)-F	-	ABCD^E**+F
A+B*(C^D^E)-F		ABCD^E**+F-

$$2) (A+B) * D + E / (F + A * D + E) + C$$

Input String	Stack	Output
$(A+B) * D + E / (F + A * D + E) + C$	(	
$(A+B) * D + E / (F + A * D + E) + C$	(	A
$(A+B) * D + E / (F + A * D + E) + C$	( +	A
$(A+B) * D + E / (F + A * D + E) + C$	( +	AB
$(A+B) * D + E / (F + A * D + E) + C$		AB +
$(A+B) * D + E / (F + A * D + E) + C$	*	AB +
$(A+B) * D + E / (F + A * D + E) + C$	*	AB + D
$(A+B) * D + E / (F + A * D + E) + C$	+	AB + D *
$(A+B) * D + E / (F + A * D + E) + C$	+	AB + D * E
$(A+B) * D + E / (F + A * D + E) + C$	+/	AB + D * E
$(A+B) * D + E / (F + A * D + E) + C$	+/ (	AB + D * E
$(A+B) * D + E / (F + A * D + E) + C$	+/ (	AB + D * E F
$(A+B) * D + E / (F + A * D + E) + C$	+/ ( +	AB + D * E F
$(A+B) * D + E / (F + A * D + E) + C$	+/ ( +	AB + D * E F A
$(A+B) * D + E / (F + A * D + E) + C$	+/ ( + *	AB + D * E F A
$(A+B) * D + E / (F + A * D + E) + C$	+/ ( + *	AB + D * E F A D
$(A+B) * D + E / (F + A * D + E) + C$	+/ ( +	AB + D * E F A D *
$(A+B) * D + E / (F + A * D + E) + C$	+/ ( +	AB + D * E F A D * + E
$(A+B) * D + E / (F + A * D + E) + C$	+/	AB + D * E F A D * + E +
$(A+B) * D + E / (F + A * D + E) + C$	+	AB + D * E F A D * + E + /
$(A+B) * D + E / (F + A * D + E) + C$	+	AB + D * E F A D * + E + / + C
$(A+B) * D + E / (F + A * D + E) + C$		AB + D * E F A D * + E + / + C +



3)  $(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$

Input String	Stack	Output
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	(	
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	(	m
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	( +	m
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	( +	mn
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$		mn +
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	*	mn +
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	*(	mn +
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	*(	mn + k
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	*( +	mn + k
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	*( +	mn + kp
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	*	mn + kpt
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	/	mn + kp + *
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	/(	mn + kp + *
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	/(	mn + kp + *g
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	/(/	mn + kp + *g
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	/(/	mn + kp + *gb
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	/	mn + kp + *gb/
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	/↑	mn + kp + *gb/
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	/↑(	mn + kp + *gb/
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	/↑(	mn + kp + *gb/a
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	/↑(↑	mn + kp + *gb/a
$(m+n) * (k+p) / (g/b) \uparrow (a \uparrow b/c)$	/↑(↑	mn + kp + *gb/ab



$(m+n)*(k+p)/(g/b)\uparrow(a\uparrow b/c)$	$/\uparrow(/$	$mn+kp+*gb/ab\uparrow$
$(m+n)*(k+p)/(g/b)\uparrow(a\uparrow b/c)$	$/\uparrow(/$	$mn+kp+*gb/ab\uparrow c$
$(m+n)*(k+p)/(g/b)\uparrow(a\uparrow b/c)$	$/\uparrow$	$mn+kp+*gb/ab\uparrow c/$
$(m+n)*(k+p)/(g/b)\uparrow(a\uparrow b/c)$		$mn+kp+*gb/ab\uparrow c/\uparrow/$

$$4) A*(B+D)/E-F*(G+H/K) \rightarrow A B D + * E / F G H K / + * -$$

Input String	Stack	Output
$A*(B+D)/E-F*(G+H/K)$		A
$A*(B+D)/E-F*(G+H/K)$	*	A
$A*(B+D)/E-F*(G+H/K)$	*(	A
$A*(B+D)/E-F*(G+H/K)$	*(	AB
$A*(B+D)/E-F*(G+H/K)$	*(+	AB
$A*(B+D)/E-F*(G+H/K)$	*(+	ABD
$A*(B+D)/E-F*(G+H/K)$	* <del>+</del>	ABD+
$A*(B+D)/E-F*(G+H/K)$	<del>+</del> /	ABD+*
$A*(B+D)/E-F*(G+H/K)$	/	ABD+*E
$A*(B+D)/E-F*(G+H/K)$	-	ABD+*E/
$A*(B+D)/E-F*(G+H/K)$	-	ABD+*E/F
$A*(B+D)/E-F*(G+H/K)$	-*	ABD+*E/F
$A*(B+D)/E-F*(G+H/K)$	-*(	ABD+*E/F
$A*(B+D)/E-F*(G+H/K)$	-*(	ABD+*E/FG
$A*(B+D)/E-F*(G+H/K)$	-*(+	ABD+*E/FG
$A*(B+D)/E-F*(G+H/K)$	-*(+	ABD+*E/FGH
$A*(B+D)/E-F*(G+H/K)$	-*(+/	ABD+*E/FGH
$A*(B+D)/E-F*(G+H/K)$	-*(+/	ABD+*E/FGHK
$A*(B+D)/E-F*(G+H/K)$	-*	ABD+*E/FGHK/
$A*(B+D)/E-F*(G+H/K)$	-*	ABD+*E/FGHK/+*-



$$5) A + (((B - C) * (D - E) + F) / G) \uparrow (H - J)$$

Input String	Stack	Output
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J)		A
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J)		A
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) +		A
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + (		A
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + ((		A
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + (((		A
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + (((		AB
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + (((-		AB
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + (((-		ABC
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + (((-		ABC-
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + (((*		ABC-
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + (((*(		ABC-
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + (((*(		ABC-D
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + (((*(-		ABC-D
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + (((*(-		ABC-DE
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + (((*(-		ABC-DE-
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + ((((+		ABC-DE-*
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + ((((+		ABC-DE- * F
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + ((((+		ABC-DE- * F +
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + ((((/		ABC-DE- * F +
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + ((((/		ABC-DE- * F + G
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + ((((/		ABC-DE- * F + G /
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + ((((/		ABC-DE- * F + G /
A + (((B - C) * (D - E) + F) / G) \uparrow (H - J) + ((((/		ABC-DE- * F + G /

$A+((B-C)* (D-E)+F)/G \wedge (H-J)$	+ ↑ (	ABC-DE-*F+G/H
$A+((B-C)* (D-E)+F)/G \uparrow (H-J)$	+ ↑ (-	ABC-DE-*F+G/H
$A+((B-C)* (D-E)+F)/G \uparrow (H-J)$	+ ↑ (-	ABC-DE-*F+G/HJ
$A+((B-C)* (D-E)+F)/G \uparrow (H-J)$	+ ↑	ABC-DE-*F+G/HJ-
$A+((B-C)* (D-E)+F)/G \uparrow (H-J)$		ABC-DE-*F+G/HJ-↑+

6)  $(a+b) * (c \wedge (d-e) + f)$

Input String	Stack	Output
$(a+b) * (c \wedge (d-e) + f)$	(	
$(a+b) * (c \wedge (d-e) + f)$	(	a
$(a+b) * (c \wedge (d-e) + f)$	( +	a
$(a+b) * (c \wedge (d-e) + f)$	( +	ab
$(a+b) * (c \wedge (d-e) + f)$		ab+
$(a+b) * (c \wedge (d-e) + f)$	*	ab+
$(a+b) * (c \wedge (d-e) + f)$	* (	ab+
$(a+b) * (c \wedge (d-e) + f)$	* (	ab+c
$(a+b) * (c \wedge (d-e) + f)$	* ( \wedge	ab+c
$(a+b) * (c \wedge (d-e) + f)$	* ( \wedge (	ab+c d
$(a+b) * (c \wedge (d-e) + f)$	* ( \wedge (-	ab+c d
$(a+b) * (c \wedge (d-e) + f)$	* ( \wedge (-	ab+c d e
$(a+b) * (c \wedge (d-e) + f)$	* ( \wedge	ab+c d e -
$(a+b) * (c \wedge (d-e) + f)$	* ( +	ab+c d e - \wedge
$(a+b) * (c \wedge (d-e) + f)$	* ( +	ab+c d e - \wedge f
$(a+b) * (c \wedge (d-e) + f)$	*	ab+c d e - \wedge f +
$(a+b) * (c \wedge (d-e) + f)$		ab+c d e - \wedge f + *



8)  $(A \wedge B) / D * E / (F + A) * (D * E) - C$

Input string	Stack	Output
$(A \wedge B) / D * E / (F + A) * (D * E) - C$	(	
$(A \wedge B) / D * E / (F + A) * (D * E) - C$	(	A
$(A \wedge B) / D * E / (F + A) * (D * E) - C$	( ^	A
$(A \wedge B) / D * E / (F + A) * (D * E) - C$	( ^	AB
$(A \wedge B) / D * E / (F + A) * (D * E) - C$		AB ^
$(A \wedge B) / D * E / (F + A) * (D * E) - C$ /	/	AB A
$(A \wedge B) / D * E / (F + A) * (D * E) - C$ /	/	AB ^ D
$(A \wedge B) / D * E / (F + A) * (D * E) - C$ *	*	AB ^ D /
$(A \wedge B) / D * E / (F + A) * (D * E) - C$ *	*	AB ^ D / E
$(A \wedge B) / D * E / (F + A) * (D * E) - C$ /	/	AB ^ D / E *
$(A \wedge B) / D * E / (F + A) * (D * E) - C$ / (	(	AB ^ D / E * F
$(A \wedge B) / D * E / (F + A) * (D * E) - C$ / ( +	( +	AB ^ D / E * F
$(A \wedge B) / D * E / (F + A) * (D * E) - C$ / ( +	( +	AB ^ D / E * F A
$(A \wedge B) / D * E / (F + A) * (D * E) - C$ /	/	AB ^ D / E * F A +
$(A \wedge B) / D * E / (F + A) * (D * E) - C$ *	*	AB ^ D / E * F A + /
$(A \wedge B) / D * E / (F + A) * (D * E) - C$ * (	(	AB ^ D / E * F A + /
$(A \wedge B) / D * E / (F + A) * (D * E) - C$ * (	(	AB ^ D / E * F A + / D
$(A \wedge B) / D * E / (F + A) * (D * E) - C$ * ( *	( *	AB ^ D / E * F A + / D
$(A \wedge B) / D * E / (F + A) * (D * E) - C$ * ( *	( *	AB ^ D / E * F A + / D E
$(A \wedge B) / D * E / (F + A) * (D * E) - C$ *	*	AB ^ D / E * F A + / D E *
$(A \wedge B) / D * E / (F + A) * (D * E) - C$ -	-	AB ^ D / E * F A + / D E **
$(A \wedge B) / D * E / (F + A) * (D * E) - C$ -	-	AB ^ D / E * F A + / D E ** C
$(A \wedge B) / D * E / (F + A) * (D * E) - C$		AB ^ D / E * F A + / D E ** C -



$$9) ((A + ((B \wedge C) - D)) * (E - (A / C)))$$

Input String	Stack	Output
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	C	
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((	
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((	A
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((+	A
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((+(	A
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((+((	A
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((+((	AB
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((+((A	AB
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((+((A	ABC
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((+((	ABCA
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((+((-	ABCA
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((+((-	ABCA D
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((+(-	ABCA D -
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((	ABCA D - +
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((*	ABCA D - +
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((*(	ABCA D - +
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((*(	ABCA D - + E
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((*(-	ABCA D - + E
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((*(-(	ABCA D - + E
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((*(-(	ABCA D - + E A
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((*(-( /	ABCA D - + E A
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((*(-( /	ABCA D - + E A C
$((A + ((B \wedge C) - D)) * (E - (A / C)))$	((*(-	ABCA D - + E A C /



$((A + ((B \wedge C) - D)) * (E - (A / C)))$	(*	$ABC \wedge D - + E AC / -$
$((A + ((B \wedge C) - D)) * (E - (A / C)))$		$ABC \wedge D - + E AC / - *$

10)  $x + y * z + (p * q + r) * s$

Input String	Stack	Output
$x + y * z + (p * q + r) * s$		$x$
$x + y * z + (p * q + r) * s$	+	$x$
$x + y * z + (p * q + r) * s$	+	$xy$
$x + y * z + (p * q + r) * s$	+	$xy$
$x + y * z + (p * q + r) * s$	+	$xyz$
$x + y * z + (p * q + r) * s$	+	$xyz * +$
$x + y * z + (p * q + r) * s$	+	$xyz * +$
$x + y * z + (p * q + r) * s$	+	$xyz * + p$
$x + y * z + (p * q + r) * s$	+	$xyz * + p$
$x + y * z + (p * q + r) * s$	+	$xyz * + pq$
$x + y * z + (p * q + r) * s$	+	$xyz * + pq * r$
$x + y * z + (p * q + r) * s$	+	$xyz * + pq * r +$
$x + y * z + (p * q + r) * s$	+	$xyz * + pq * r +$
$x + y * z + (p * q + r) * s$	+	$xyz * + pq * r + s$
$x + y * z + (p * q + r) * s$	+	$xyz * + pq * r + s * +$