Opamp based assignment

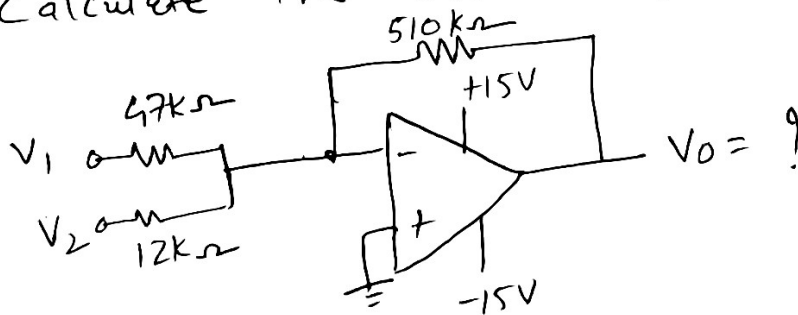**Q-1** Calculate the output voltage for the following circuit.

$$150 K\Omega$$

$$3.6 K\Omega$$

$+12V$

V_{in}
At $50 mV$ rms
(RMS value)

$-12V$

$V_0 = ?$

Q-2 Calculate the output voltage for the following circuit.

$$720 K\Omega$$

$$36 K\Omega$$

$+9V$

$V_0 = ?$

$-9V$

At $V_{in} = 20 mV$ RMS
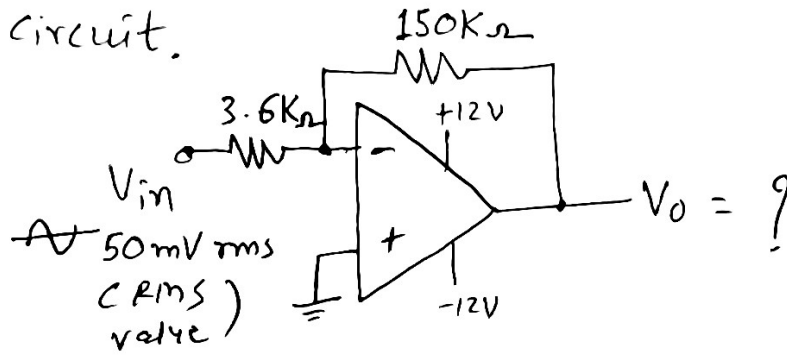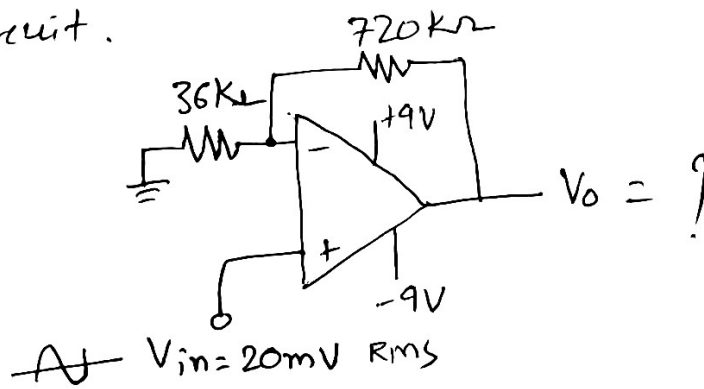
Q-3 Calculate the output voltage for the following circuit.

Take $V_1 = 40 mV$
$V_2 = 20 mV$

$$510 K\Omega$$

$47 K\Omega$

V_1

$+15V$

$V_0 = ?$

V_2
$12 K\Omega$

$-15V$

Q-4 If $V_1 = V_2 = 1 Volt\ DC$ in $\underline{Q-3}$,
what will be the value of $V_0 = ?$

Q-5 Calculate the output voltage for following circuit.
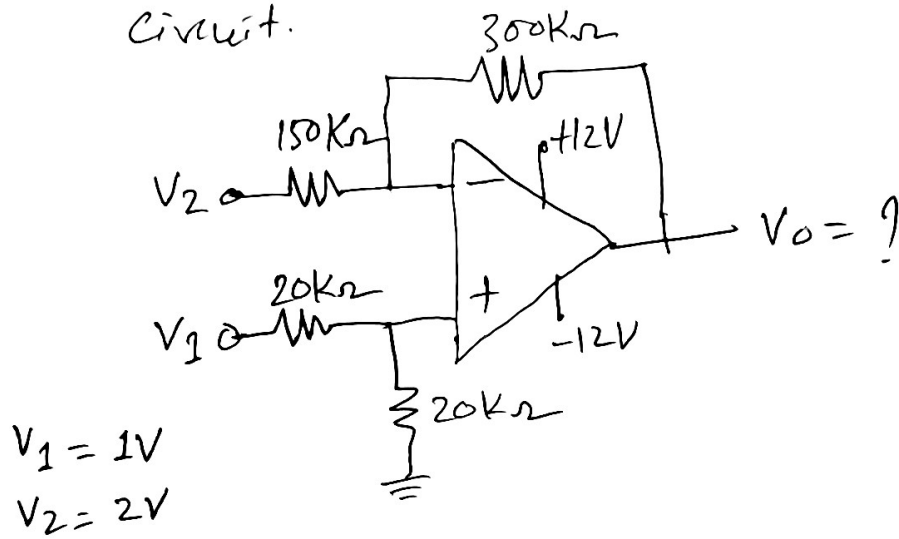
$V_1 = 1V$
$V_2 = 2V$

$300K\Omega$
$150K\Omega$
V_2
$+12V$
$V_o = ?$
$20K\Omega$
V_1
$-12V$
$20K\Omega$

Q-6 Calculate the output voltage for the following circuit.

$+12V$
$V_1 = 1.5V$
$-12V$
$22K\Omega$
$100K\Omega$
$+12U$
$V_o = ?$
$-12V$

Q-7 Calculate the output voltage for the following circuit.

$V_1 = 3V$
$+12V$
$-12V$
$35K\Omega$
$1K\Omega$
$5K\Omega$
$10K\Omega$
$10K\Omega$
$10K\Omega$
$+12V$
$-12V$
$10K\Omega$
$V_o = ?$
$V_2 = 1V$
$+12V$
$-12V$
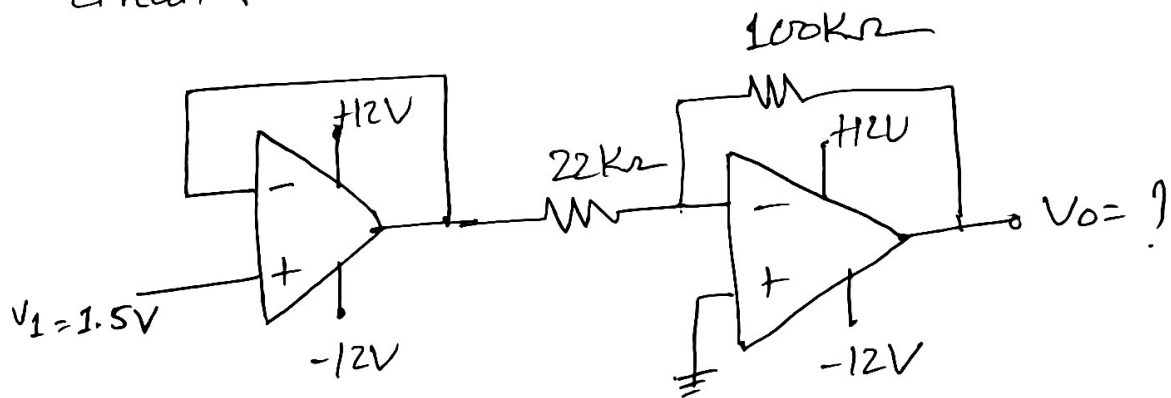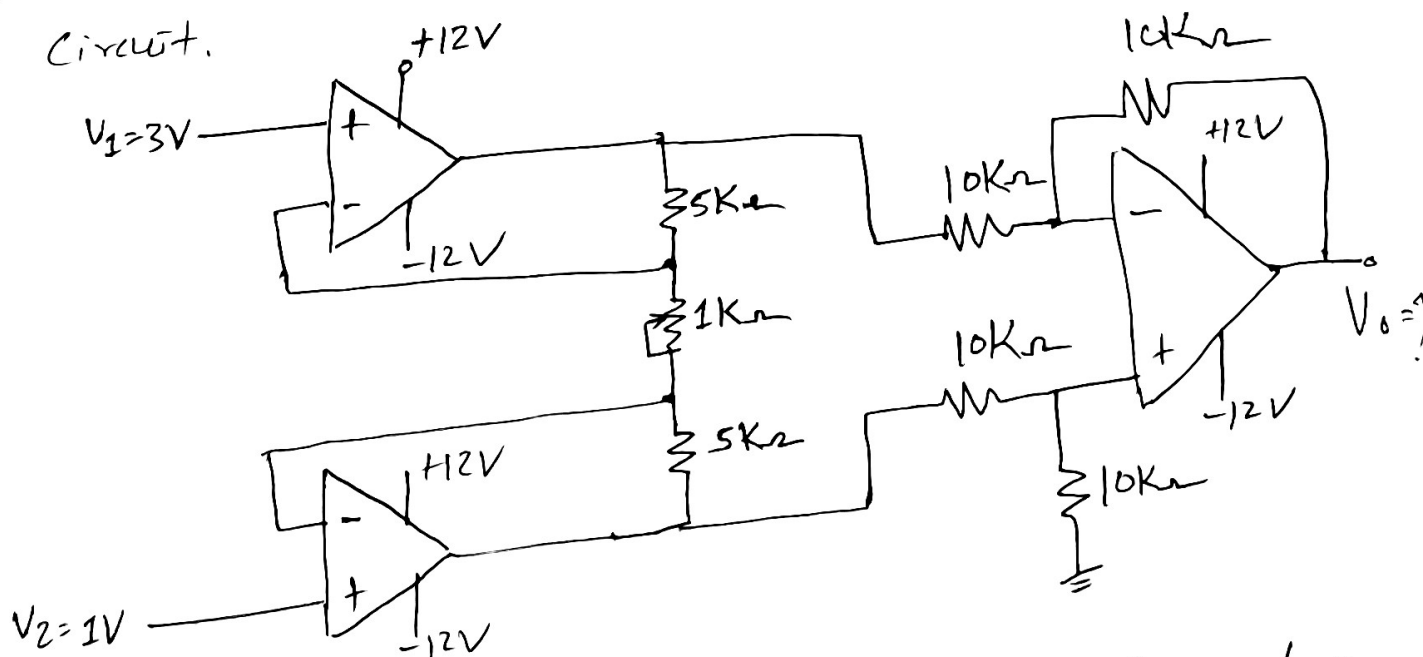
Q-8

What is output voltage in below mentioned circuit?

$$V_1 = 3V$$

$$+12V$$

$$V_0 = ?$$

$$2V$$

$$-12V$$
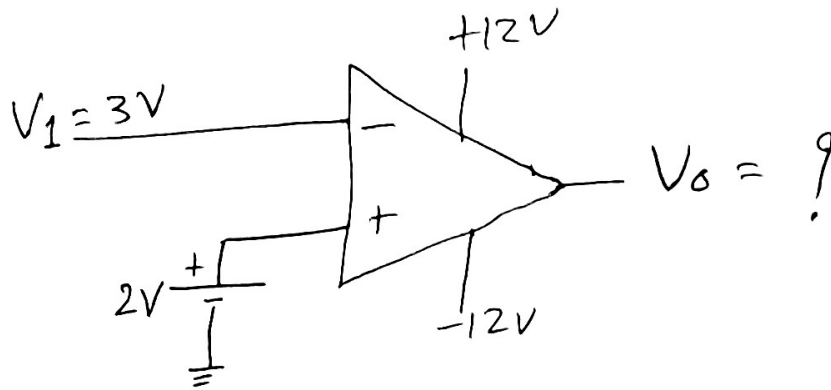
Q-9

Which type of output waveform will be produced by following circuit? Draw the o/p waveform with reference to input.

$$+12V$$

$$V_{in} \quad 1V_{peak}$$

$$V_0 = \underline{\quad}$$

$$-12V$$
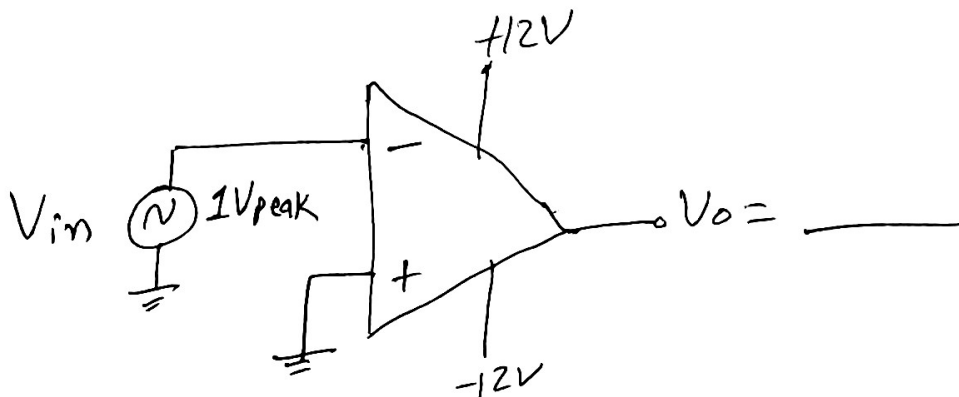
Q-10

Calculate UTP and LTP for following circuit if $+V_{sat} = +11V$ & $-V_{sat} = -11V$

$$+12V$$

$$V_{in}$$

$$V_0$$

$$-12V$$

$$10K\Omega$$

$$1K\Omega$$