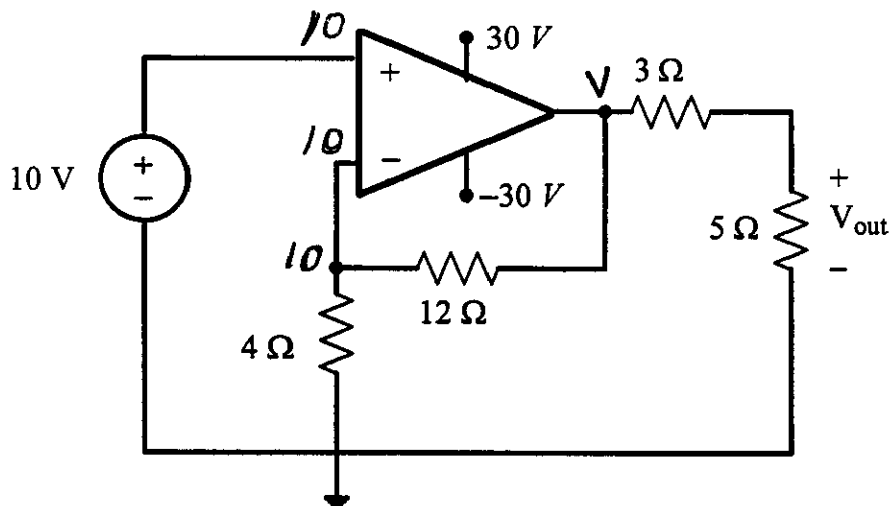| SER	ID	NAME KEY

For the OP AMP circuit shown above find the followings :

(a) V_{out} ?

(b) If the power supply is changed from ± 30 to ± 20 what is V_{out} ?
between a and b ?

(a) $\underline{kcl}$ $\dfrac{10}{4} + \dfrac{10-V}{12} = 0$ $\Rightarrow$ $3(10) + 10 - V = 0$

$\Rightarrow V = 40$ $\Rightarrow$ Saturation $V = 30V$

$V_{out} = \dfrac{5}{3+5}\, 30 = \dfrac{150}{8} = 18.75\ V$

(b) Power supply ± 20 $\Rightarrow$ $V = 20$

$V_{out} = \dfrac{5}{3+5}\, 20 = \dfrac{100}{8} = 12.5\ V$