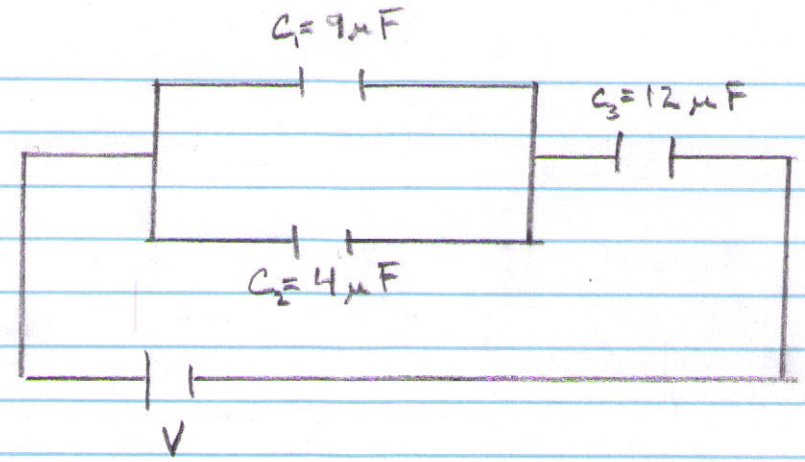
16.a)



FOUR V.

C_1 & C_2 ARE CONNECTED IN PARALLEL & ARE EQUAL TO: $C_1 + C_2 = (9+4)\mu F = 13\mu F$

THE CIRCUIT IS THEN EQUIVALENT TO 2C IN SERIES.

$$C_{NET} = 1/C_{1,2} + 1/C_3 = 1/13\mu F + 1/12\mu F$$
$$= 12/156\mu F + 13/156\mu F$$
$$= 25/156\mu F$$
$$= 156/25$$
$$= 6\mu F$$

THE NET CAPACITANCE IS $6\mu F$.

b) $Q = CV = (6\mu F)(32V) = 192\mu C$

$V_{C_3} = Q/C = (192\mu C)/(12\mu F) = 16V$
$V_{C_2} = Q/C = (96\mu C)/(4\mu F) = 24V$
$V_{C_1} = Q/C = (96\mu C)/(9\mu F) = 11V$