Question 4
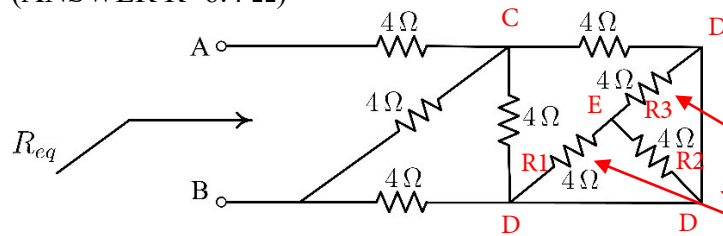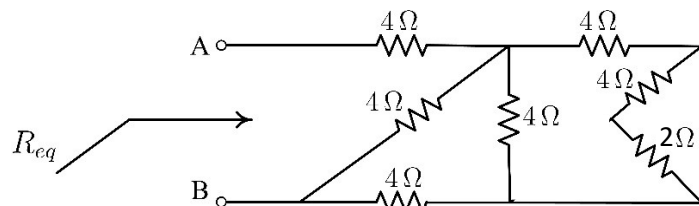
Q4 – V1.   Find the equivalent resistance seen from terminals A and B of the circuit below.
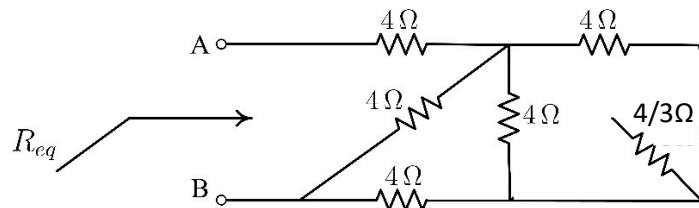(ANSWER R=6.4 Ω)

Most common error was dealing with the bottom right 3 resistors

These 3 resistors do not affect the circuit. They are shorted.
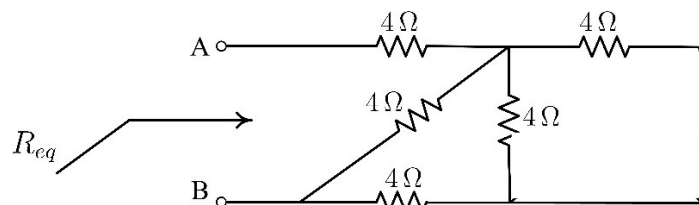
Can combine them in parallel to show

R1 || R2 = 4Ω || 4Ω = 2Ω

R3 || 2Ω = 4Ω || 2Ω = 4/3Ω

This equivalent resistor is not connected to anything
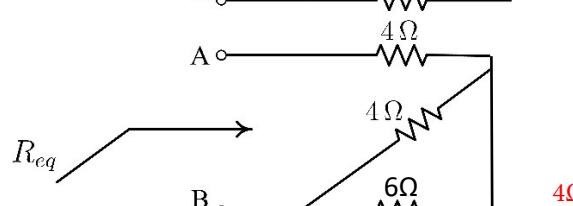Can look back at original circuit and see that node D is a 0Ω pathway around those 3 resistors
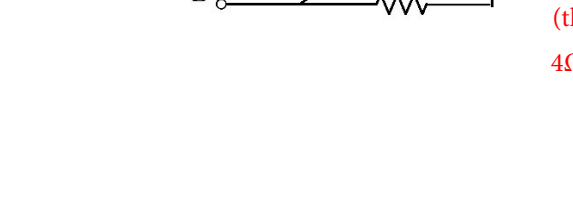
Removed floating resistor
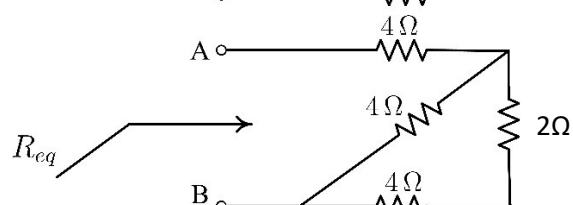
Two 4Ω resistors in parallel
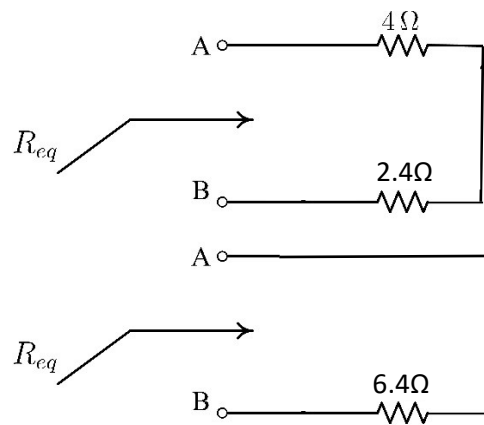(they share the same pair of nodes at their terminals)

4Ω || 4Ω = 2Ω

4Ω and 2Ω resistor in series
(they share 1 common, which has NO other connections to it)

4Ω + 2Ω = 6Ω

4Ω and 6Ω resistors in parallel
(they share the same pair of nodes at their terminals)

4Ω || 6Ω = 2.4Ω

R_{eq}

A o———————$\overset{4\,\Omega}{\text{\Large ⌇}}$

B o———————$\overset{2.4\Omega}{\text{\Large ⌇}}$

4Ω and 2.4Ω resistor in series
(they share 1 common, which has NO other connections to it)

4Ω + 2.4Ω = 6.4Ω

R_{eq}

A o———————————

B o———————$\overset{6.4\Omega}{\text{\Large ⌇}}$