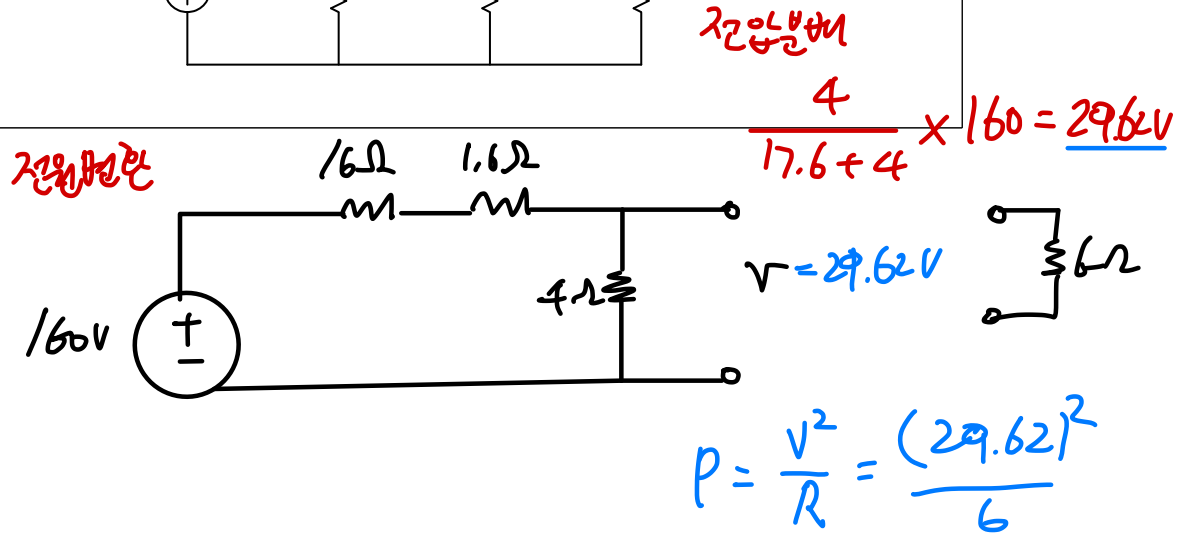
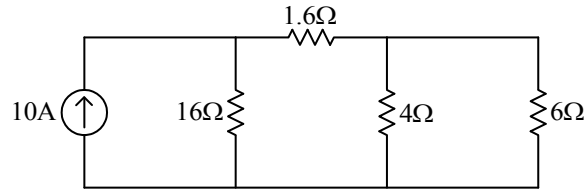


예제 3.3

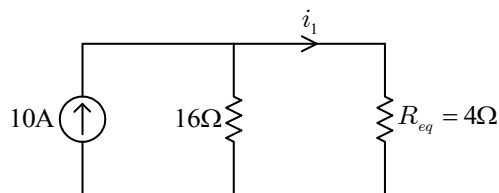
다음 회로의 6Ω 저항에서 소모되는 전력을 구하라.



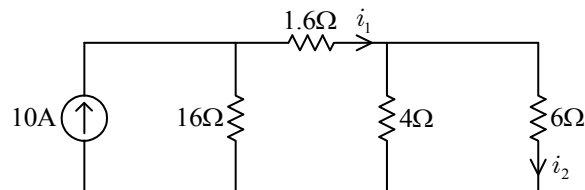
[풀이]

16Ω 저항 우측부분의 등가저항은 $R_{eq} = 1.6 + (4 \parallel 6) = 1.6 + \frac{24}{10} = 4\Omega$ 이므로

다음 회로에서 전류분배법칙에 의해 $i_1 = \frac{\frac{1}{4}}{\frac{1}{16} + \frac{1}{4}} \times 10 = \frac{4}{1+4} \times 10 = 8A$



따라서 다음 회로에서 전류분배법칙에 의해 $i_2 = \frac{\frac{1}{6}}{\frac{1}{4} + \frac{1}{6}} \times 8 = \frac{2}{3+2} \times 8 = 3.2A$



따라서 $P_{6\Omega} = 6i_2^2 = \frac{1536}{25} = 61.44W$