MC) 1) $R = \frac{\rho l}{A}$ (a)
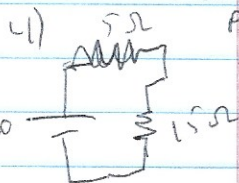
2) $V = IR$

   $I = \frac{V}{R}$ (d)

3) $P = I^2 R = I \Delta V = \frac{V^2}{R}$

   $R = \frac{V^2}{P} = \frac{(120)^2}{60} = 240 \Omega$ (c)

4)

   $I = \frac{V}{R} = \frac{40}{20} = 2A$

   $V = IR = 2A \cdot 15\Omega = 30V$

5) $\left(\left(\left(\frac{1}{12} + \frac{1}{4} \right)^{-1} + 3 \right)^{-1} + \frac{1}{3} \right)^{-1}$ (b)

   $= 2\Omega$ (e)

6) (d)   7) $V = IR = 12 \cdot 12 = 144V$
                                              (e)

8) $V = IR$

   $I = \frac{V}{R} = \frac{24V}{8\Omega} = 3A$ (e)

9) $\frac{E}{t} = I^2 R$

   $E = I^2 R t = (0.5A)^2 (100\Omega)(20s)$

   $= 500 J$ (d)

10) $\tau = RC = 250\Omega \cdot 200 \times 10^{-6}$

   $= 0.05 s$ (b)