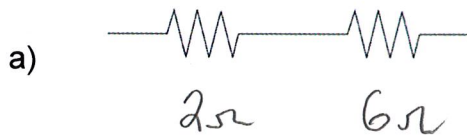


# KEY / Solutions

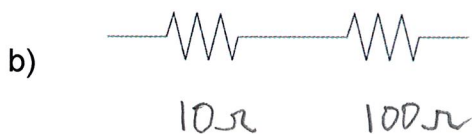
## Physics 11 Resistors in Series and Parallel Practice #1

Name: \_\_\_\_\_

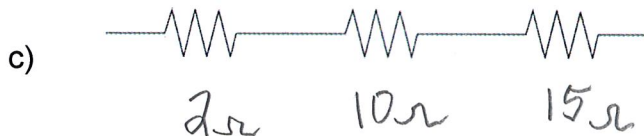
1. Calculate the equivalent resistance of the resistors in series drawn below.



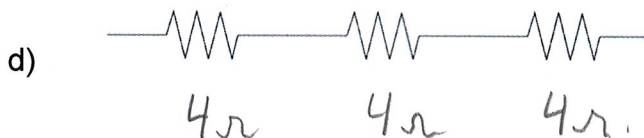
$$R_{\text{TOTAL}} = \underline{8\Omega}$$



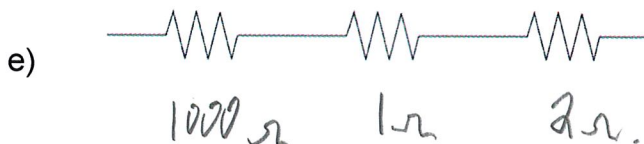
$$R_{\text{TOTAL}} = \underline{110\Omega}$$



$$R_{\text{TOTAL}} = \underline{27\Omega}$$

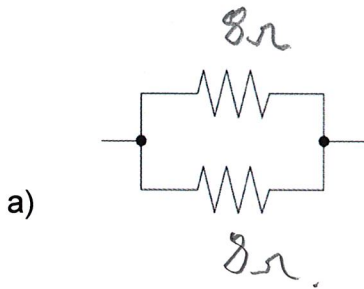


$$R_{\text{TOTAL}} = \underline{12\Omega}$$

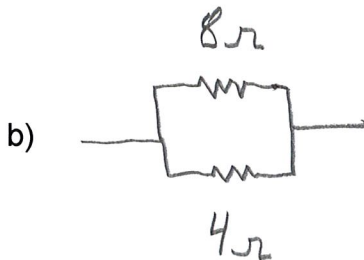


$$R_{\text{TOTAL}} = \underline{1003\Omega}$$

2. Calculate the equivalent resistance of the resistors in parallel drawn below.

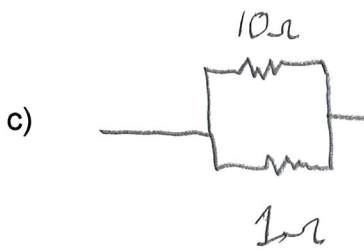


$$R_{\text{TOTAL}} = \underline{4 \Omega}$$



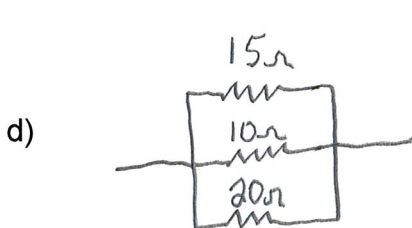
$$\begin{aligned} \frac{1}{R_p} &= \frac{1}{R_1} + \frac{1}{R_2} \\ \frac{1}{R_p} &= \frac{1}{8} + \frac{1}{4} = 0.375 \\ R_p &= 2.67 \Omega \end{aligned}$$

$$R_{\text{TOTAL}} = \underline{2.67 \Omega}$$



$$\begin{aligned} \frac{1}{R_p} &= \frac{1}{R_1} + \frac{1}{R_2} \\ &= \frac{1}{10} + \frac{1}{1} \\ \frac{1}{R_p} &= 1.1 \\ R_p &= 0.91 \Omega \end{aligned}$$

$$R_{\text{TOTAL}} = \underline{0.91 \Omega}$$



$$\begin{aligned} \frac{1}{R_p} &= \frac{1}{15} + \frac{1}{10} + \frac{1}{20} = 0.216 \\ R_p &= 4.61 \end{aligned}$$

$$R_{\text{TOTAL}} = \underline{4.61}$$