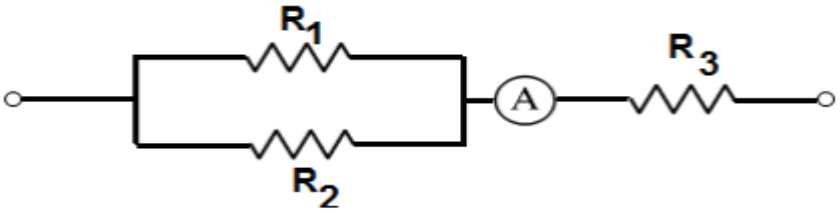
1. Find force acting on a point charge q on z axis due to a ring of charge of radius a carrying uniform line charge density ρ_l

A. $\boldsymbol{a * z/(2\,\pi\,(z\text{^}2 + a\text{^}2)\text{^}(3/2))\,a_z}$
B. $a * z/(2\,\pi\,(z\text{^}2 + a\text{^}2)\text{^}(3/2))\,a_y$
C. $1/(2\,\pi\,(z\text{^}2 + a\text{^}2)\text{^}(3/2))\,a_z$
D. $1/(2\,\pi\,(z\text{^}2 + a\text{^}2)\text{^}(3/2))\,a_y$

2. One of the following complex power loads has a lagging power factor:

A. $\boldsymbol{S_L = 10\ MW + j\ 5\ Mvar.}$
B. $S_L = 10\ MW - j\ 5\ Mvar$
C. $S_L = \ \ 0\ MW - j\ 5\ Mvar$
D. $S_L = \ 10\ MW + j\ 0\ Mvar$

3. Two resistors R1 = 6 Ω and R2 = 12 Ω are connected in parallel to each other and in series to R3 = 2 Ω. An ammeter measures an electric current of 3 A flowing though resistor R3. What is the current in 12 Ω resistor?



A. 6 A
B. 1 A
C. 3 A
D. 5 A