

# Chapter 4

## Electric Energy

4.1 the rock/earth system when the rock is on the ground

4.2 50 J

4.3 2.45 J

4.4  $3.12 \times 10^7$  J

4.5  $8.99 \times 10^{-2}$  J

4.6  $8.99 \times 10^{-2}$  J

4.7 (a) Energy required relative to  $A$  is  $kq^2/L$ . Energy required relative to  $B$  is  $kq^2/L$ . Add together to get  $2kq^2/L$ . (b)  $1.8 \times 10^3$  J

4.8 (a)  $1.8 \times 10^{-35}$  J, (b)  $4.5 \times 10^{-3}$  m/s