



V Capital voltage

v lower case velocity

scalar
 $V = kq \frac{1}{r}$

vector Force
 $F = k \frac{q_1 q_2}{r^2}$

vector E Field
 $E = k \frac{q}{r^2}$

$PE = qV = k \frac{q_1 q_2}{r}$

→
 more than 2q

$$V_5 = \frac{kq_5}{r} = \frac{9 \times 10^9 (5 \times 10^{-6})}{4} = 1.12 \times 10^4 V$$

$$V_2 = \frac{kq_2}{r} = \frac{9 \times 10^9 (2 \times 10^{-6})}{5} = -0.36 \times 10^4 V$$

$$V_P = V_5 + V_2 = 1.12 - 0.36 = 0.76 \times 10^4 V$$

b) $W=?$ (ΔE) $q_3 = 4 \times 10^{-6} C$ from ∞ to pt. P

$$W = q_3 V$$

$$= 4 \times 10^{-6} (0.76 \times 10^4) = 0.03 J$$