Menghitung eV.

1. $E = \frac{hc}{\lambda}$

- $h = 6.626 \times 10^{-34}$ J
- $c = 3 \times 10^{8}$ m/s
- $\lambda = 1000$ nm $= 1 \times 10^{-6}$ m

$$E = \frac{(6.626 \times 10^{-34})(3 \times 10^{8})}{1 \times 10^{-6}}$$

$$= \frac{1.9878 \times 10^{-25}}{1 \times 10^{-6}}$$

$$= 1.9878 \times 10^{-19} \text{ J}$$

eV =

$1 \text{ eV} = 1.6 \times 10^{-19}$ J

$$E = \frac{1.9878 \times 10^{-19}}{1.6 \times 10^{-19}}$$

$$= 1.24 \text{ eV} //.$$

No
Date

2. Momentum foton

$$p = \frac{E}{c}$$

$$p = \frac{1,9878 \times 10^{-19}}{3 \times 10^{8}}$$

$$p = 6,63 \times 10^{-28} \text{ kgm/s} \;//.$$

3. $E = \frac{1}{2} m v^2$

dengan:

$m = 9,109 \times 10^{-31}$ kg (massa elektron)

$E = 1,9878 \times 10^{-19}$ J

$$v = \sqrt{\frac{2E}{m}}$$

$$v = \sqrt{\frac{2 \times 1,9878 \times 10^{-19}}{9,109 \times 10^{-31}}}$$

$$= \sqrt{\frac{3,9756 \times 10^{-19}}{9,109 \times 10^{-31}}}$$

$$= \sqrt{4,363 \times 10^{11}}$$

$$= 6,61 \times 10^{5} \text{ m/s}$$

$$= 660,642 \text{ m/s} \;//.$$