

Solutions

Award method and answer marks as indicated; accept equivalent correct methods.

2.1

- Move the point five places: 5.4×10^5 .

2.2

- Divide by 1000: **0.0038**.

2.3

- The coefficient is 9.1; 9.1×10^{-5} restores the value.

2.4

- $Q = (8/2) \times 10^{6-2} = 4 \times 10^4$.

3.1

(a)

- $N = (2.5 \times 10^4) \times 12 = 30 \times 10^4 = 3 \times 10^5$.

(b)

- $B = (3 \times 10^5)/(6 \times 10^2) = 0.5 \times 10^3 = 500$.

(c)

- $N = 3 \times 100000 = 300000$.

3.2

(a)

- Use $N = \text{capacity}/\text{image size}$.
- $N = (3.6/4.5)10^{9-6} = 800$ images.
- Assume all the stated capacity is available for images, with no other storage used.

(b)

- Write the second size as 0.75×10^8 .
- Total $S = (2.8 + 0.75)10^8$, so $S = 3.55 \times 10^8$ bytes.