DOM SEG TER QUA QUI SEX SAB

Exercícios Aula 1:

① $3,25 \times 10^2 + 75 \times 10^{-2} = 3,25 \times 10^2 + 0,75 = \boxed{325,75}$ ou 325

② $8,445 \times 10^{-3} - 45 \times 10^{-6} = 8445 \cdot 10^{-6} - 45 \cdot 10^{-6} = 8400 \cdot 10^{-6}$
$= \boxed{8,4 \cdot 10^{-3}}$

③ $(2 \times 10^{-3}) \times (7 \times 10^2) = (2 \times 10^{-3}) \times (7 \times 10^2) = 2 \times 7 \times 10^{-3+2} = 14 \times 10^{-1}$
$a^m \cdot a^n = a^{m+n}$
$= \boxed{1,4}$

④ $9,333 \times 10^{-3} \div 12,8 \times 10^{-4} = \frac{9,333 \times 10^{-3}}{12,8 \times 10^{-4}} = 0,729 \times 10^{-3+4}$
$\frac{a^m}{a^n} = a^{m-n}$, $a^{-m} = \frac{1}{a^m}$ $= 0,729 \times 10^1 = \boxed{7,29}$

⑤ $(12 \times 10^{-2})^2 = (12 \times 10^{-2}) \times (12 \times 10^{-2}) = 12 \times 12 \times 10^{-2+(-2)} = 144 \times 10^{-4}$
$a^m \cdot a^n = a^{m+n}$ $= 14,4 \times 10^{-3}$
ou $(a^m)^n = a^{m \cdot n} \Rightarrow (12 \times 10^{-2})^2 = 12 \times 12 \times 10^{-2 \cdot 2} = 144 \times 10^{-4}$
$= \boxed{14,4 \times 10^{-3}}$

⑥ $\sqrt[3]{2,7 \times 10^4} = \sqrt[m]{a \cdot b} = \sqrt[m]{a} \cdot \sqrt[m]{b} \Rightarrow \sqrt[m]{a^m} = a$
$= \sqrt[3]{2,7} \cdot \sqrt[3]{10^4} = \sqrt[3]{2,7} \cdot \sqrt[3]{10^3 \cdot 10^1} = \sqrt[3]{2,7} \cdot \sqrt[3]{10^3} \cdot \sqrt[3]{10^1} =$
$= \sqrt[3]{2,7} \cdot 10 \cdot \sqrt[3]{10^1} = \sqrt[3]{2,7 \cdot 10^1} \cdot 10 = 10 \sqrt[3]{27} = 10 (27)^{\frac{1}{3}}$
$= 10 \cdot 3 = \boxed{30}$

⑦ $(2,51 \times 10^{-2} - 51 \times 10^{-4})^2 - 2^2$ ⇒ Ordem das Operações
(PEMDAS) = Parênteses, Expoentes, Multiplicação, Divisão, Adição e Subtração

$= (2,51 \times 10^{-2} - 0,51 \times 10^{-2})^2 - 4 = (2,0 \times 10^{-2})^2 - 4 = (a^m)^n$
$= 2,0 \times 2,0 \times 10^{-2 \cdot 2} - 4 = 4 \times 10^{-4} - 4 = a^{m \cdot n}$
$= 0,0004 - 4 = \boxed{-3,9996}$

(8) 149,6 mi de Km = 149600000 Km → m = $1,496.10^{11}$ m

m = ?

1 Km → 10^3 m

ou $149,6.10^6 \times 10^3 = 149,6 \times 10^9 = 1,496 \times 10^{11}$ m

(9) 0,0000014 m = $1,4.10^{-6}$ m = 1,4 µm

(10) 0,00000000000000008751 = $8,751 \times 10^{-16}$ m = 0,8751 fm

1 Fentometro = 1 fm = 1.10^{-15} m

(11) 9,6 mi de Km − 20 mil m = $9,6.10^6$ Km → m =

= $9,6.10^6.10^3 = 9,6.10^9$ m − 20.10^3 m ; 1 Km → 10^3 m

= $9,6.10^9 - 0,00002.10^9 = 9,59998.10^9$ m

(12) 0,0000014 m + 8.10^{-7} m + 1.10^{-4} m

0,0000014 + 0,0000008 + 0,0001 =

0,0000014
+ 0,0000008
0,0001
0,0001022 m

(13) 0,00000000000000008751 m + 40000000 m

1.10^{-15} m → 1 fm ↳ $0,8751.10^{-15}$ fm

= $0,8751.10^{-15}$ fm + $4,0.10^{22}$ fm

= 0,00000000000000008751 fm
+ 40.10^{22} fm
$4,00000000000000008751.10^{22}$ fm