

① C: $2x = y$

O: $14 = 2y + 6 \rightarrow 2y = 8 \rightarrow y = 4$

$\Rightarrow x = 2$

(C)

② $\frac{\text{neutronen}}{\text{elektronen}} = \frac{1,5}{1} = 1,5$

A) ${}^{94}_{40}\text{Zr}^{4+} \rightarrow n = 94 - 40 = 54$

$e^- = 40 - 4 = 36$

(A)

$\frac{n}{e^-} = \frac{54}{36} = \frac{27}{18} = \frac{3}{2} = 1,5$

③ F, O, N \rightarrow grote elektronegativiteit
 \rightarrow sterk polaire binding



geval D \rightarrow F gebonden aan C,

niet aan H!

\rightarrow niet sterk polair

(D)

\Rightarrow geen H-brugge!

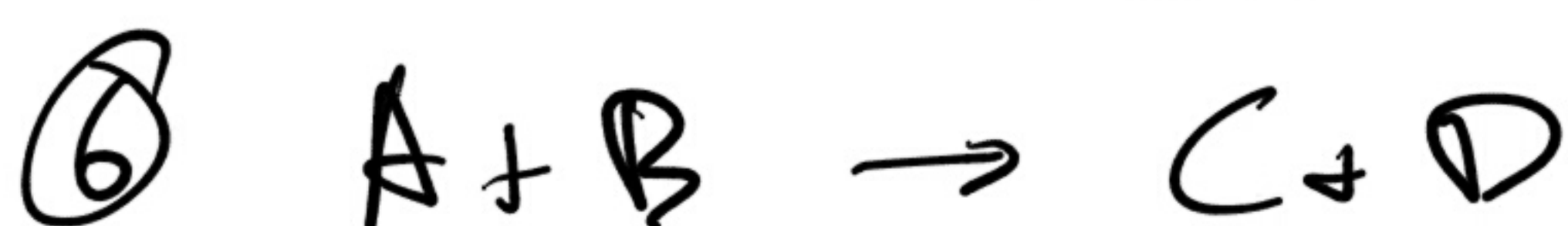
④ Afgeschaft.



$$M = 24,3 + 32,1 + 4 \cdot 16 = 120,4 \text{ g/mol}$$

$$\Rightarrow n = \frac{m}{M} = \frac{2,4 \text{ g}}{120,4 \text{ g/mol}} \approx 0,02 = 20 \text{ mmol}$$

(B)



$$1 \rightarrow 2 \quad A \rightarrow \times 2 \quad B \rightarrow \times 2 \quad v \rightarrow \times 2$$

$$2 \rightarrow 4 \quad A \rightarrow \times 2 \quad B \rightarrow \times 2 \quad v \rightarrow \times 2$$

$$\Rightarrow v \sim [A][B]$$

$$1 \rightarrow 3 \quad A \times 3, B \times 2 \quad v_3 = 6 v_1$$

$$v_3 = 0,0015 \cdot 6$$

$$= 0,009 = x$$

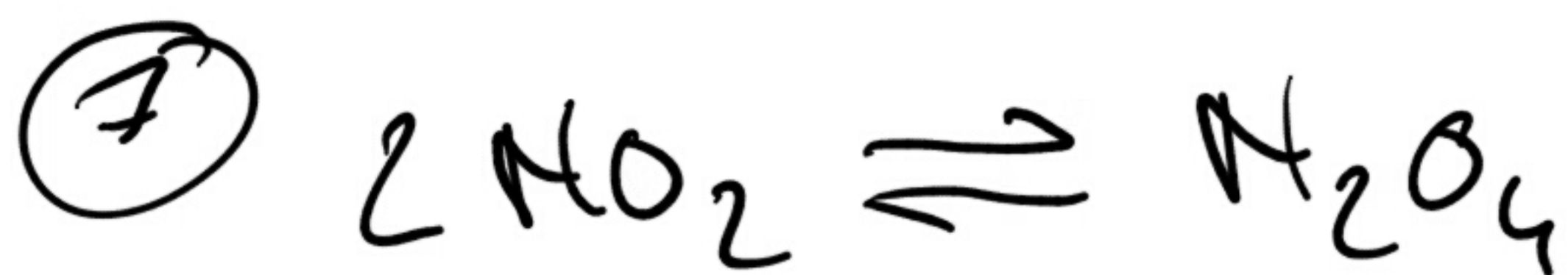
$$v = k [A][B] \Rightarrow k = \frac{v}{[A][B]}$$

$$\Rightarrow (1) \Rightarrow k = \frac{0,0015}{0,1 \cdot 0,1} = 0,15$$

$$\Rightarrow v_5 = 0,018 = 0,15 \cdot y \cdot 0,3 = \frac{45}{1000} y$$

$$\Rightarrow y = \frac{18}{45} = \frac{2}{5} = 0,4$$

(A)



$T \rightarrow C \text{ st}$

$V \rightarrow \frac{1}{2} V$

$\Rightarrow P \rightarrow 2P$

reactie verschuift
naar de stof met
de minste
moleculen

Concentratie $\times 2$

$\hookrightarrow B \text{ en } D$

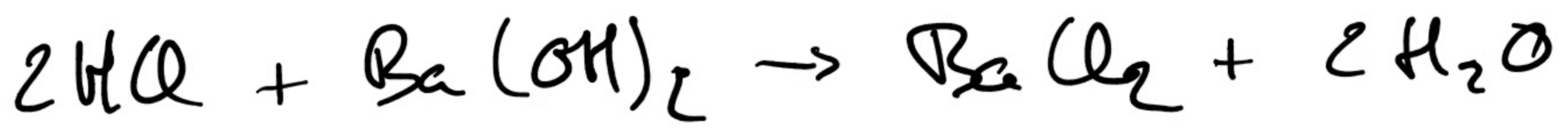
$\hookrightarrow \text{N}_2\text{O}_4 \uparrow$

grafiek B

C

$$\textcircled{8} \quad \text{HCl} \rightarrow 0,04 \text{ l} \cdot 0,1 \frac{\text{mol}}{\text{l}} = 0,004 \text{ mol}$$

$$\text{Ba(OH)}_2 \rightarrow 0,04 \text{ l} \cdot 0,1 \frac{\text{mol}}{\text{l}} = 0,004 \text{ mol}$$



$$\begin{array}{cccc} 0,004 & 0,004 & 0 & 0 \\ -0,004 & -0,002 & 0,002 & 0,002 \\ 0 & \underline{\underline{0,002}} & 0,002 & 0,002 \end{array} \left. \vphantom{\begin{array}{cccc} 0,004 & 0,004 & 0 & 0 \\ -0,004 & -0,002 & 0,002 & 0,002 \\ 0 & \underline{\underline{0,002}} & 0,002 & 0,002 \end{array}} \right\} \text{mol}$$

$$\text{concentration } c = \frac{0,002 \text{ mol}}{0,08 \text{ l}} = \frac{2}{80} = \frac{1}{40} \frac{\text{mol}}{\text{l}}$$

$$[\text{OH}^-] = 2c = \frac{2}{40} = \frac{1}{20} \frac{\text{mol}}{\text{l}}$$

$$\text{pOH} = -\log([\text{OH}^-]) = -\log\left(\frac{1}{20}\right)$$

$$= -\log(2 \cdot 10^{-2}) = \log(2 \cdot 10)$$

$$= \log(2) + \log(10) \approx 0,3 + 1 \\ \approx 1,3$$

$$\text{pH} = 14 - \text{pOH} = 14 - 1,3 = 12,7$$

B

