Q9

$$4PH_3 \longrightarrow P_{4(s)} + 6H_2(g)$$

$$K \times t_{1/2} = \frac{0.693}{K} \times K$$

$$\frac{35.0K}{35.0} = \frac{0.693}{35.0}$$

$$K = 0.0198M/s$$

Q10).

$$\ln A_{(t)} = -Kt + \ln(A_0)$$

But $A_0 = 0.25$

$$\frac{95}{100} \times 0.25 = 0.2375$$

$$\ln 0.2375 = -0.0198 + \ln 0.25$$

$$-1.4375 = -0.0198t + -1.386$$

$$-1.4375 + 1.386 = -0.0198t$$

$$\frac{-0.0515}{-0.0198} = \frac{-0.0198t}{-0.0198}$$

$$t = 2.60s$$

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