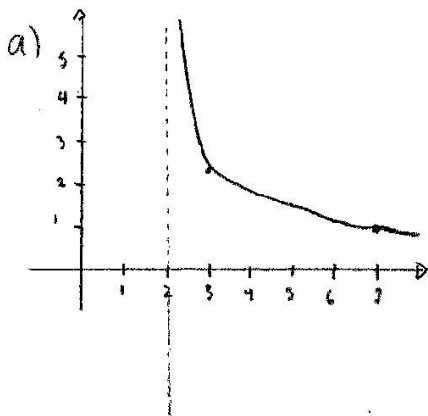


CAPSULE 6 p 424

$$\begin{aligned} 2(x-2) &= 10 \\ x-2 &= 5 \\ x &= 7 \end{aligned}$$

no: 1 $f(x) = -2 \log(2x-4) + 3 \Rightarrow f(x) = -2 \log(2(x-2)) + 3$



b) Dom: $]2, \infty[$ c) $x=2$
 Im: \mathbb{R}

d) $0 = -2 \log(2(x-2)) + 3$
 $-3 = -2 \log(2(x-2))$
 $1.5 = \log(2(x-2)) \Rightarrow \begin{cases} 10^{1.5} = 2(x-2) \\ \left(\frac{10^{1.5}}{2}\right) + 2 = x \\ 17.81 = x \end{cases}$

e) Décroissante

no: 2 a) $] -4, 20[$
 b) $x = -4$

c) $y = \log_c(x-h)$

$y = \log_c(x+4) \Rightarrow 2 = \log_c(5+4)$
 $2 = \log_c 9$
 $c^2 = 9$
 $c = 3$

no: 4 a) $\frac{\ln x}{\ln 10} = \log_{10} x$ b) $2 \log x - \log(x^2+1) + 2 \log(x-1)$
 $\log x^2 - \log(x^2+1) + \log(x-1)^2$
 $\log \frac{x^2(x-1)^2}{(x^2+1)}$

no: 5 a) $\log_3 2 + \log_3 4.5 = \log_3 9 = 2$

b) $\log_{20} 800 = \frac{\log 800}{\log 20} = 2.23$

no: 6 a) $\log_2(x-4) + \log_2(x+2) = 4$

b) $5^{x+3} = 8^{2x}$

$\log_2(x-4) \cdot (x+2) = 4$
 $\log_2 x^2 - 2x - 8 = 4$
 $2^4 = x^2 - 2x - 8$

$\log 5^{x+3} = \log 8^{2x}$

$(x+3) \log 5 = (2x) \log 8$

$0 = x^2 - 2x - 24$

$x \log 5 + 3 \log 5 = 2x \log 8$

$3 \log 5 = 2x \log 8 - x \log 5$

$3 \log 5 = x(2 \log 8 - \log 5)$

$x = -4 \text{ et } 6$

$\frac{3 \log 5}{2 \log 8 - \log 5} = x$

$\hookrightarrow x = 1.894$

Arijeter

8)b) [51.90]

$$c) 60 = -40 \log \left(\frac{n}{4} + 1,5 \right) + 100$$

$$-40 = -40 \log \left(\frac{n}{4} + 1,5 \right)$$

$$1 = \log \left(\frac{n}{4} + 1,5 \right)$$

$$10 = \frac{n}{4} + 1,5$$

$$8,5 = \frac{n}{4}$$

$$n = 34 \text{ pieces}$$

7) $M = M_0 e^{bx}$

$$a) 0,8 M_0 = M_0 e^{b \cdot 5}$$

$$0,8 = e^{b \cdot 5}$$

$$\ln 0,8 = \ln e^{b \cdot 5}$$

$$\ln 0,8 = 5b \ln e$$

$$\frac{\ln 0,8}{5} = b \rightarrow b = -0,0446$$

$$b) 0,5 M_0 = M_0 e^{-0,0446x}$$

$$0,5 = e^{-0,0446x}$$

$$\ln 0,5 = \ln e^{-0,0446x}$$

$$\ln 0,5 = -0,0446x \ln e$$

$$\frac{\ln 0,5}{-0,0446} = x \rightarrow x = 15,54$$