

#1 Révision

a) $y = -3(4)^{-1(x-7)} + 6$

$y = -3\left(\frac{1}{4}\right)^{x-7} + 6$

b) $0 = -3\left(\frac{1}{4}\right)^{x-7} + 6$

$2 = \left(\frac{1}{4}\right)^{x-7}$

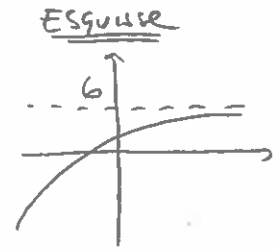
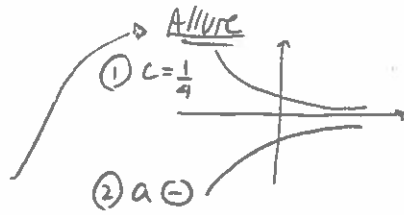
$2 = (2^{-2})^{x-7}$

$2^1 = 2^{-2x+14}$

$1 = -2x + 14$

$-13 = -2x$

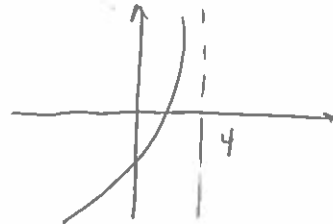
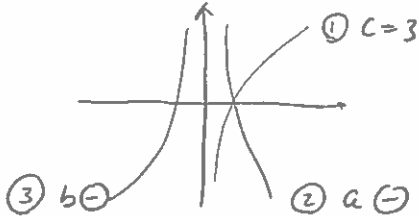
$\boxed{6,5 = x}$



c) croissante

a) $y = -\log_3 -2(x-4) + 3$

Alure



ESQUISSE

b) $0 = -\log_3 -2(x-4) + 3$

$3 = \log_3 -2(x-4)$

$3^3 = -2(x-4)$

$27 = -2x + 8$

$\boxed{-9,5 = x}$

c) croissante.

$$\begin{aligned} \#2a) \quad 27^{x-2} &= 9^{2x+1} \\ (3^3)^{x-2} &= (3^2)^{2x+1} \\ 3^{3x-6} &= 3^{4x+2} \\ 3x-6 &= 4x+2 \\ -x &= 8 \\ \boxed{x = -8} \end{aligned}$$

$$b) \quad \frac{(2^6)^{-x+1}}{(2^3)^{x-1}} \cdot (2^2)^{2x+3} = 2^4$$

$$\frac{2^{-6x+6}}{2^{3x-3}} \cdot 2^{4x+6} = 2^4$$

$$2^{-9x+9} \cdot 2^{4x+6} = 2^4$$

$$2^{-5x+15} = 2^4$$

$$-5x+15 = 4$$

$$\boxed{x = 2,2}$$

$$\#3a) \quad 3^{2x+1} = 4^{x+2}$$

$$\text{loi: } \textcircled{1} \quad 3^{2x+1} = (3^{\log_3 4})^{x+2}$$

$$3^{2x+1} = (3^{1,26})^{x+2}$$

$$3^{2x+1} = 3^{1,26x+2,52}$$

$$2x+1 = 1,26x+2,52 \Rightarrow \underline{\underline{x = 2,06}}$$

$$b) \quad 8e^{2x+5} = 72$$

$$e^{2x+5} = 9$$

$$\text{Exposant} = \log_e \quad 2x+5 = \log_e 9$$

$$2x+5 = 2,2$$

$$\boxed{x = -1,4}$$

$$c) \quad 2 \cdot 6^x = 5^{3x-4}$$

$$5^{\log_5 2} \cdot (5^{\log_5 6})^x = 5^{3x-4} \quad \text{base 5 loi } \textcircled{1}$$

$$5^{0,43} \cdot 5^{1,11x} = 5^{3x-4}$$

$$5^{1,11x+0,43} = 5^{3x-4}$$

$$1,11x+0,43 = 3x-4$$

$$-1,89x = -4,43$$

$$\boxed{x = 2,34}$$

$$\#4 \quad 10,5 = 4,59 \log_3 (0,5x + 4,25) + 4$$

$$1,42 = \log_3 (0,5x + 4,25)$$

$$3^{1,42} = 0,5x + 4,25$$

$$\boxed{0,98 = x}$$

2 Archile

#5a) $\ln(x+3) - 2 = -7$

$\ln(x+3) = -5$

$\ln(x+3) = -1$

$e^{-1} = x+3$

$-2,63 = x$

b) $\log_7(x-5) = 4 - \log_7(x+3)$

$x > 5$
 $x > -3$ } restrictions

$\log_7(x-5) + \log_7(x+3) = 4$

$\log_7(x^2 - 2x - 15) = 4$ loi ②

$7^4 = x^2 - 2x - 15$

$0 = x^2 - 2x - 2416$

$\frac{2 \pm \sqrt{4 + 9664}}{2}$

$(+) 50,16$
 $(-) -48,16$

c) $\log_8(x-5) - \log_8(\sqrt{x})^2 = 3$ loi ④

$x > 5$
 $x > 0$ } restrictions

$\log_8 \frac{x-5}{x} = 3$

loi ③

$8^3 = \frac{x-5}{x}$

$512 = \frac{x-5}{x}$

$\Rightarrow 512x = x-5$

$511x = -5$
 $x = -\frac{5}{511}$

rejetée



#6 $4,5\% \rightarrow 12 \text{ mois}$
 $? \rightarrow 2 \text{ mois}$

$0,75\%$

$\rightarrow 18'' 2 \text{ mois dans } 3 \text{ ans}$

a) $V_f = 700(1,0075)^{18} = 800,77 \$$

b) $1000 = 700(1,0075)^x$
 $1,43 = 1,0075^x$

$x = \log_{1,0075} 1,43 = 47,73$ périodes de 2 mois ou $47,73 \times 2 = 95,47$ mois
 $\rightarrow \div 6 = 7,95 \text{ ans}$
 $95,47 / 12 = 7,95 \text{ ans}$

$$\#7 \quad 2 \log 3 + 4 \log x - 3 \log x$$

$$\log 3^2 + \log x^4 - \log x^3 \quad \text{loi } (4)$$

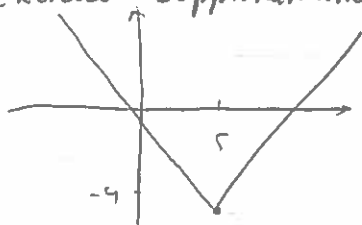
$$a) \quad \log \frac{9 \cdot x^4}{x^3} = \underline{\log 9x} \quad \text{loi } (2) \text{ et } (3)$$

$$b) \quad 5 \log 2x - 2 \log 4x$$

$$\log (2x)^5 - \log (4x)^2 \quad \text{loi } (4)$$

$$\log \frac{32x^5}{16x^2} = \underline{\log 2x^3} \quad \text{loi } (3) + \text{Simplification.}$$

#8 Exercice supplémentaire Zéro de la f. Valeur absolue.



$$0 = 2|x-5| - 9$$

$$4,5 = |x-5|$$

$$x-5 > 0$$

$$x-5 < 0$$

$$x > 5$$

$$x < 5$$

$$x-5 = 4,5$$

$$x-5 = -4,5$$

$$\underline{x = 9,5}$$

$$\underline{x = 0,5}$$