

Logaritme oefening 3 antwoorden

1. ${}^2\log(x+4)=5$ $x+4=32$ dus $x = 28$
2. ${}^x\log 3 = \frac{1}{2}$ $x^{\frac{1}{2}} = 3$ dus $x=9$
3. $\left(\frac{2}{3}\right)^x > 2$ 1. $\left(\frac{2}{3}\right)^x = 2$ $x = \frac{2}{3}\log 2 = -1,709$ 2. plot 3. opl $x < -1,709$
4. ${}^{1/2}\log x \geq 3$ 1. ${}^{1/2}\log x = 3$ $x=1/8$ 2. plot 3. opl $0 < x \leq 1/8$
5. $\log x + \log(x-1) = \log 6$ $x(x-1) = 6 \Rightarrow x^2 - x - 6 = 0$ opl $x=3$ ($x= -2$ kn)
6. $\log 2x + \log(x-3) = \log 8$ dus $\log 2x(x-3) = \log 8$
 $2x(x-3) = 8$ dus $2x^2 - 6x - 8 = 0$
 $x^2 - 3x - 4 = 0$ dus $(x-4)(x+1) = 0$
 $x=4$ ($x=-1$ kan niet)
7. $5^x = {}^3\log 7$ dan $x = {}^5\log({}^3\log 7) = {}^5\log(1,77) = 0,3552$
8. ${}^2\log(x-1) < 3$ 1. ${}^2\log(x-1) = 3$
 $x-1 = 8$ dus $x=9$
 2. schets
 3. $1 < x < 9$
9. ${}^{1/2}\log x \geq 2$ 1. ${}^{1/2}\log x = 2$ levert $x = \frac{1}{4}$
 2. schets
 3. oplossing. $0 < x \leq 1/4$
10. $3 + {}^2\log x = {}^2\log 8 + {}^2\log x = {}^2\log 8x$
11. ${}^2\log(x+2) < {}^2\log(6-x)$ 1. ${}^2\log(x+2) = {}^2\log(6-x)$
 $x+2 = 6-x$ dus $x=2$
 2. schets
 3. $-2 < x < 2$
12. $2 + 3 \cdot (5,2)^x = 20$ dus $(5,2)^x = 6$ dus $x = 1,0868$
13. ${}^3\log x = 4,6$ dus $x = 3^{4,6} = 156,59$
14. $7^t = 50$ dus $t = {}^7\log 50 = 2,01$
15. ${}^4\log x < 5$
 ${}^4\log x = 5 \Rightarrow x = 4^5$
 Grafiek van $f(x) = {}^4\log x$ is stijgend dus oplossing: $0 < x < 4^5$
16. $\left(\frac{1}{2}\right)^x > 3$ $\left(\frac{1}{2}\right)^x = 3 \Rightarrow x = \frac{1}{2}\log 3$
 Grafiek van $f(x) = \left(\frac{1}{2}\right)^x$ is dalend dus oplossing: $x < \frac{1}{2}\log 3$