§ 79 Nr 1

a) $4^x = 12 \Rightarrow x \log(4) = \log(12) \Rightarrow x = \frac{\log(12)}{\log(4)} \approx 1{,}792$

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b) $2{,}4^x = 3{,}9 \Rightarrow x \cdot \log(2{,}4) = \log(3{,}9) \Rightarrow x = \frac{\log(3{,}9)}{\log(2{,}4)} \approx 1{,}555$

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c) $1{,}14^y = 0{,}7 \Rightarrow y \cdot \log(1{,}14) = \log(0{,}7) \Rightarrow x = \frac{\log(0{,}7)}{\log(1{,}14)} \approx -2{,}722$

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d) $0{,}45^z = 1{,}9 \Rightarrow z \log(0{,}45) = \log(1{,}9) \Rightarrow z = \frac{\log(1{,}9)}{\log(0{,}45)} \approx -0{,}804$

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e) $3{,}72^x = 5 \Rightarrow x \log(3{,}72) = \log(5) \Rightarrow x = \frac{\log(5)}{\log(3{,}72)} \approx 1{,}225$

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f) $1{,}46^{3x} = 0{,}8 \Rightarrow 3x \log(1{,}46) = \log(0{,}8) \Rightarrow 3x = \frac{\log(0{,}8)}{\log(1{,}46)} \Rightarrow x = \frac{\log(0{,}8)}{3\log(1{,}46)}$

$x \approx -0{,}197$

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g) $8{,}2^{-x} = 4{,}9 \Rightarrow -x \cdot \log(8{,}2) = \log(4{,}9) \Rightarrow x = \frac{\log(4{,}9)}{-1\log(8{,}2)} \approx -0{,}755$

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h) $5{,}6^{-2x} = 1{,}4 \Rightarrow -2x \cdot \log(5{,}6) = \log(1{,}4) \Rightarrow x = \frac{\log(1{,}4)}{-2\log(5{,}6)} \approx -0{,}098$

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i) $2 \cdot 3^x = 1{,}4 \Rightarrow 3^x = \frac{1{,}4}{2} \Rightarrow x \log(3) = \log\left(\frac{1{,}4}{2}\right) \Rightarrow x = \frac{\log(0{,}7)}{\log(3)} \approx -0{,}328$

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j) $0{,}9 \cdot 1{,}4^x = 3{,}2 \Rightarrow 1{,}4^x = \frac{3{,}2}{0{,}9} \Rightarrow x = \frac{\log\left(\frac{3{,}2}{0{,}9}\right)}{\log(1{,}4)} \approx 3{,}770$