

Antwoorden overh. 4v: h12 versie 1

1. a. $x = {}^3\log 8$
 $x = 1,893$

b. $5^x = 10$
 $x = {}^5\log 10$
 $x = 1,431$

c. ${}^x\log 5 = 3$
 $x^3 = 5$
 $x = 1,710$

d. $35 \cdot (1,4)^x = 500$
 $(1,4)^x = 14,2857$
 $x = {}^{1,4}\log 14,2857$
 $x = 7,903$

e. $30 \cdot (1,7)^x = 200 \cdot (1,3)^x$
 $\frac{1,7^x}{1,3} = \frac{200}{30} = 6,667$
 $x = {}^{1,307}\log 6,667$
 $x = 7,072$

2. a. $\log 5 + \log x = \log 15$
 $\log 5x = \log 15$
 $x = 3$

b. ${}^7\log 98 - {}^7\log x = 2$
 $\frac{98}{x} = {}^7\log 49$
 $x = 2$

c. $\log 2x + \log (x-3) = \log 20$
 $\log 2x(x-3) = \log 20$
 $2x(x-3) = 20$
 $x^2 - 3x - 10 = 0$
 $x = 5$ ($x = -2$ vervalt)

d. $5^{x+5}\log 7 = 7$
 $5^{x+5}\log 7 = 5^5\log 7$
 $x = 0$

e. ${}^3\log 5 \cdot {}^5\log 6 \cdot {}^6\log 4 \cdot {}^4\log 9 = x$

$${}^3\log 5 \cdot \frac{{}^3\log 6}{{}^3\log 5} \cdot \frac{{}^3\log 4}{{}^3\log 6} \cdot \frac{{}^3\log 9}{{}^3\log 4} = x$$

$$\underline{x = 2}$$