1. $\log_{\frac{1}{3}} x = -3$

    $x = \left(\dfrac{1}{3}\right)^3 \implies \boxed{x = 27}$

2. $\log_4 x = 2$

    $x = 4^2 \implies \boxed{x = 16}$

3. $\log_{\frac{1}{4}} x = \dfrac{3}{2}$

    $x = \left(\dfrac{1}{4}\right)^{\frac{3}{2}} \implies x = \left[\left(\dfrac{1}{2}\right)^2\right]^{\frac{3}{2}} \implies x = \left(\dfrac{1}{2}\right)^3 \implies \boxed{x = \dfrac{1}{8}}$

4. $\log x = 0{,}01$

    $x = 10^{0{,}01} \implies \boxed{x = \sqrt[100]{10}}$

5. $\log_{\frac{2}{3}} x = 1$

    $x = \left(\dfrac{2}{3}\right)^1 \implies \boxed{x = \dfrac{2}{3}}$

6. $\log_{\frac{2}{5}} x = -\dfrac{3}{4}$

    $x = \left(\dfrac{2}{5}\right)^{-\frac{3}{4}} \implies x = \left(\dfrac{5}{2}\right)^{\frac{3}{4}} \implies \boxed{x = \sqrt[4]{\left(\dfrac{5}{2}\right)^3}}$

7. $\log_{\frac{3}{8}} x = -2$

    $x = \left(\dfrac{3}{8}\right)^{-2} \implies x = \left(\dfrac{8}{3}\right)^2 \implies \boxed{x = \dfrac{64}{9}}$

8. $\log_{\frac{8}{27}} x = -\dfrac{1}{3}$

    $x = \left(\dfrac{8}{27}\right)^{-\frac{1}{3}} \implies x = \left[\left(\dfrac{2}{3}\right)^3\right]^{-\frac{1}{3}} \implies x = \left(\dfrac{2}{3}\right)^{-1} \implies \boxed{x = \dfrac{3}{2}}$

9. $\log_{\sqrt{2}} x = -2$

$$x = (\sqrt{2})^{-2} \Rightarrow x = \left(\frac{1}{\sqrt{2}}\right)^2 \Rightarrow \boxed{x = \frac{1}{2}}$$

10. $\log_{25} x = \frac{1}{2}$

$$x = 25^{\frac{1}{2}} \Rightarrow \boxed{x = 5}$$

11. $\log_{\frac{3}{4}} x = -\frac{3}{4}$

$$x = \left(\frac{3}{4}\right)^{-\frac{3}{4}} \Rightarrow x = \left(\frac{4}{3}\right)^{\frac{3}{4}} \Rightarrow \boxed{x = \sqrt[4]{\frac{64}{27}}}$$

12. $\log_{\sqrt[4]{3}} x = 4$

$$x = (\sqrt[4]{3})^4 \Rightarrow x = [(3)^{\frac{1}{4}}]^4 \Rightarrow \boxed{x = 3}$$

13. $\log_{\frac{1}{2}} x = -\frac{2}{3}$

$$x = \left(\frac{1}{2}\right)^{-\frac{2}{3}} \Rightarrow x = 2^{\frac{2}{3}} \Rightarrow \boxed{x = \sqrt[3]{4}}$$

14. $\log_{\frac{4}{3}} x = 1$

$$x = \left(\frac{4}{3}\right)^1 \Rightarrow \boxed{x = \frac{4}{3}}$$

15. $\log_{100} x = -\frac{1}{2}$

$$x = 100^{-\frac{1}{2}} \Rightarrow x = \left(\frac{1}{100}\right)^{\frac{1}{2}} \Rightarrow \boxed{x = \frac{1}{10}}$$

16. $\log_{0,8} x = -1$

$$x = \left(\frac{8}{10}\right)^{-1} \Rightarrow \boxed{x = \frac{5}{4}}$$

17. $\log (\log x) = 2$

$\log x = 10^2 \Rightarrow x = 10^{10^2} \Rightarrow \boxed{x = 10^{100}}$

18. $\log_2 (\ln (x - 1)) = 1$

$\ln (x - 1) = 2^1 \Rightarrow x - 1 = e^2 \Rightarrow \boxed{x = 1 + e^2}$

19. $\ln x = \dfrac{1}{2}$

$x = e^{\frac{1}{2}} \Rightarrow \boxed{x = \sqrt{e}}$

20. $\ln (x + 1) = -2$

$x + 1 = e^{-2} \Rightarrow x + 1 = \dfrac{1}{e^2} \Rightarrow \boxed{x = \dfrac{1}{e^2} - 1}$

21. $\ln (3x - 4) = 0$

$3x - 4 = e^0 \Rightarrow 3x - 4 = 1 \Rightarrow 3x = 5 \Rightarrow \boxed{x = \dfrac{5}{3}}$

22. $\ln x = 2\ln 3x$

$x = 9x^2 \Rightarrow x(9x - 1) = 0 \Rightarrow x = 0 \ non \ acc. \ perché \ x > 0 \quad \boxed{x = \dfrac{1}{9}}$

23. $\ln 3x + \ln \dfrac{x}{3} = \ln 4$

$c.a.: x > 0: \quad \ln \left(3x \cdot \dfrac{x}{3} \right) = \ln 4 \Rightarrow x^2 = 4 \Rightarrow x = \pm 2 \Rightarrow \boxed{x = 2}$

24. $\ln (x + 1) = 1 + \ln 2x$

$c.a.: \begin{cases} x + 1 > 0 \\ x > 0 \end{cases} \Rightarrow x > 0$

$\ln (x + 1) = \ln e + \ln 2x \Rightarrow \ln (x + 1) = \ln 2ex \Rightarrow x + 1 = 2ex$

$x(1 - 2e) = -1 \Rightarrow x(2e - 1) = 1 \Rightarrow \boxed{x = \dfrac{1}{2e - 1}}$