

$$x = \underline{\hspace{2cm}} \quad e^{2x} - 2e^x - 3 = 0$$

$$x = \underline{\hspace{2cm}} \quad \frac{1}{2}x - 8x^{1/3} = 0$$

$$x = \underline{\hspace{2cm}} \quad 2^x = 3e^{4x}$$

$$x = \underline{\hspace{2cm}} \quad 1 - \frac{1}{1+x} = k$$

$$x = \underline{\hspace{2cm}} \quad e^{x-2} = k \cdot 4^x$$

$$x = \underline{\hspace{2cm}} \quad 4x^3 e^{kx} - 16x e^{kx} = 0$$

$$x = \underline{\hspace{2cm}} \quad 2 \ln(5x) = \ln(x+2)$$

$$x = \underline{\hspace{2cm}} \quad (2x+5)^2 + 5(2x+5) - 36 = 0$$

$$x = \underline{\hspace{2cm}} \quad 10^{2x} + 3(10^x) - 10 = 0$$

$$x = \underline{\hspace{2cm}} \quad 3(2^{2t}) - 11(2^t) - 4 = 0$$

$$x = \underline{\hspace{2cm}} \quad \sqrt{x+9} - 2 = \sqrt{x-3}$$

$$x = \underline{\hspace{2cm}} \quad \frac{x}{12} - \frac{2}{x} = \frac{1}{x}$$

$$x = \underline{\hspace{2cm}} \quad \left(\frac{1}{x+8}\right)^2 + \frac{1}{x+8} - 6 = 0$$

$$x = \underline{\hspace{2cm}} \quad x^4 + 2x^2 = 3$$

$$x = \underline{\hspace{2cm}} \quad \frac{1}{x-1} + 4 = \frac{1}{5}$$

$$x = \underline{\hspace{2cm}} \quad (x+5)(x-2) = 8$$

$$z = \underline{\hspace{2cm}} \quad 3az + 1 = 3a - 4z$$

$$z = \underline{\hspace{2cm}} \quad \frac{12}{z} - \frac{7}{z+1} = 1$$

$$y = \underline{\hspace{2cm}} \quad 0 = 12y^2 + 12y - 24$$

$$w = \underline{\hspace{2cm}} \quad \ln(w+2) = \ln(w) + \ln(5)$$

$$t = \underline{\hspace{2cm}} \quad P = 10e^{kt}$$

$$t = \underline{\hspace{2cm}} \quad 2^t = e^{t-2}$$

$$t = \underline{\hspace{2cm}} \quad t^2 e^{3t} + 9t e^{3t} = 0$$

$$t = \underline{\hspace{2cm}} \quad \ln(t) + (2t) = \ln(8)$$

$$t = \underline{\hspace{2cm}} \quad 5 \log(t) = 3$$

$$t = \underline{\hspace{2cm}} \quad t^4 - 9t = 0$$

$$n = \underline{\hspace{2cm}} \quad \frac{(n^2 - 2)(3n + 5)}{n - 3} = 0$$

$$p = \underline{\hspace{2cm}} \quad \frac{(p^2 - 5)(p + 3)^2}{p + 1} = 0$$

$$w = \underline{\hspace{2cm}} \quad \log(w) + \log(w+1) = \log(20)$$

$$L = \underline{\hspace{2cm}} \quad T = \frac{1}{2\pi} \sqrt{\frac{L}{g}}$$

$$\theta = \underline{\hspace{2cm}} \quad \frac{(1-2\mu\theta)(\mu+\theta) - (\theta - \mu\theta^2)}{(\mu+\theta^2)^2} = 0 \quad \text{Assume } \mu > 0$$

$$x = \underline{\hspace{2cm}} \quad \frac{k(x^2 + r_0^2)^{3/2} - kx\left(\frac{3}{2}\right)(x^2 + r_0^2)^{1/2}(2x)}{\left((x^2 + r_0^2)^{3/2}\right)^2} = 0$$

$$D = \underline{\hspace{2cm}} \quad \frac{1}{1 + \left(\frac{2\alpha}{D}\right)^2} \left(\frac{-2\alpha}{D^2}\right) - \frac{1}{1 + \left(\frac{a}{D}\right)^2} \left(\frac{-\alpha}{D^2}\right) = 0$$

$$x = \underline{\hspace{2cm}} \quad -14kx^{-3} + 2k(20-x)^{-3} = 0 \quad \text{Assume } k \neq 0 \quad \text{hint: Do not expand the power}$$

$$x = \underline{\hspace{2cm}} \quad \frac{25x}{\sqrt{1200^2 + x^2}} - 20 = 0$$

$$w = \underline{\hspace{2cm}} \quad -5.12Vw^{-2} + 10w = 0 \quad \text{Assume } V > 0$$

Simplify

$$\frac{2x^{2/3}(x^2-3) \cdot 2x - \frac{2}{3}x^{-1/3}(x^2-3)^2}{(x^2-3)^{3/2}} =$$

$$\frac{1 - \frac{1}{x}}{\frac{1}{x} - x}$$