

1/1K
Final Exam
Study Guide SLOT p. 314-315 11, 12, 27-34, 43-50, 63, 64, 76

$$11. y\text{-int: } f(0) = \frac{100}{5 + 3e^{-0.05(0)}} = \frac{100}{5 + 3 \cdot 1} = \frac{100}{8} = \frac{50}{4} = \frac{25}{2} \quad (0, \frac{25}{2})$$

$$\text{HA's } \lim_{f(x) \rightarrow -\infty} f(x) = 0, \lim_{f(x) \rightarrow \infty} f(x) = 20 \quad \text{HA's } x/y = 0, y = 20$$

$$12. y\text{-int } f(0) = \frac{50}{5 + 2e^{-0.04(0)}} = \frac{50}{5 + 2(1)} = \frac{50}{7} \quad y\text{-int } (0, 50/7)$$

$$\text{HA's } \lim_{x \rightarrow \infty} f(x) = 0 \quad \lim_{x \rightarrow -\infty} f(x) = 10 \quad \text{HA's } y = 0, y = 10$$

$$27. \log_2 32 = x$$

$$2^x = 32$$

$$2^x = 2^5$$

$$x = 5$$

$$28. \log_3 81 = x$$

$$3^x = 81$$

$$3^x = 3^4$$

$$x = 4$$

$$29. \log \sqrt[3]{10} = x$$

$$10^x = \sqrt[3]{10}$$

$$10^x = 10^{1/3}$$

$$x = \frac{1}{3}$$

$$30. \ln \frac{1}{\sqrt{e^7}} = x$$

$$e^x = (e^7)^{-1/2}$$

$$e^x = e^{-7/2}$$

$$x = -7/2$$

$$31. \log_3 x = 5$$

$$3^5 = x$$

$$x = 243$$

$$32. \log_2 x = y$$

$$2^y = x$$

$$33. \ln \frac{x}{y} = -2$$

$$e^{-2} = \frac{x}{y}$$

$$\frac{1}{e^2} = \frac{x}{y}$$

$$y = \frac{x}{e^2}$$

$$34. \log \frac{a}{b} = -3$$

$$10^{-3} = \frac{a}{b}$$

$$a = \frac{b}{1000}$$

$$43. 10^x = 4$$

$$\log 10^x = \log 4$$

$$x \log 10 = \log 4$$

$$x = \frac{\log 4}{\log 10}$$

$$44. e^x = 0.25$$

$$\ln e^x = \ln 0.25$$

$$x \ln e = \ln 0.25$$

$$x = \ln 0.25$$

$$46. \ln x = .54$$

$$e^{.54} = x$$

$$45. 1.05^x = 3$$

$$\log 1.05^x = \log 3$$

$$x \log 1.05 = \log 3$$

$$x = \frac{\log 3}{\log 1.05}$$