1) antilog 4 = x

2) $4^x = 434$

3) $\log_3 (x + 4) + \log_3 5 = \log_3 (3x + 2)$

4) $2^{x+4} = 5^x$

5) $9^x = 27^{x+2}$

6) Tom invested $500 in a company with an average rate of growth of 12% per year. How long will it take to be worth $2000?

1) antilog 4 = x

2) $4^x = 434$

$10^4 = x$

$10000 = x$

$\text{antiln } 4 = x \Rightarrow e^4$

$\log_4 434 = x$

$x = 4.381$

3) $\log_3 (x + 4) + \log_3 5 = \log_3 (3x + 2)$

$\log_3 (5x+20) = \log_3 (3x+2)$

$x = -9$

$5x + 20 = 3x + 2$

$-3x \qquad -20$

$2x = -18$

4) $2^{x+4} = 5^x$

$\log_2 5^x = x+4$

$x \log_2 5 = x+4$

$x \log_2 5 - x = 4$

$x(\log_2 5 - 1) = 4$

$x = \frac{4}{\log_2 5 - 1} = 3.026$

Graph

5) $9^x = 27^{x+2}$

$(3^2)^x = (3^3)^{x+2}$

$2x = 3x + 6$

$-x = 6$

$x = -6$ ✓

6) Tom invested $500 in a company with an average rate of growth of 12% per year. How long will it take to be worth $2000?

$y = A(1+r)^t$

$2000 = 500(1+0.12)^t \rightarrow$ Graph

$4 = 1.12^t$

$\log_{1.12} 4 = t$

12.233 years

$2e^{0.5x} = 45$

$e^{0.5x} = 22.5$ $\div 2$

$\log_e 22.5 = 0.5x$ Rewrite

$\ln 22.5 = 0.5x$

$\div 0.5$

$4\ln(2x+3) = 11$

$\ln(2x+3) = 2.75$ $\ln(2x+3)^4 = 11$

$e^{2.75} = 2x+3$ $e^{11} = (2x+3)^4$

Ans $^{1/4}$

Ans -3

Ans $\div 2$