

Name: _____

Solving Exponential Equations

2 kinds

Does not require using logs

Requires Logs

1st – Solving not using logs:

a) $4^{2x-7} = 64$

b) $2^{3x+1} = 32$

c) $\left(\frac{1}{16}\right)^x = \left(\frac{1}{2}\right)^{5x-6}$

d) $16^p \left(\frac{1}{8}\right)^{-p-3} = 32$

2nd – Solving using logs

a) $3^{x+2} = 100$

b) $100 = 50e^{.25x}$

c) $8 \cdot 10^x + 3 = 4068$

Solving Log equations

Condense both sides



If left with 2 logs, one on each side – just cancel

If left with 1 log – use exponentials

1st – left with two logs:

a) $\log(6 - x) - 2\log x = \log 12$

b.) $\log_{11}(-3m + 10) = \log_{11}(9 - 2m)$

c) $\log_3 x + \log_3 2 = \log_3 10$

2nd – left with one log - Use exponentials:

a) $\log_{16} x^2 = 1$

b.) $\log_3 x + \log_3(x + 24) = 4$

c) $\log_2 x - \log_2 4 = 5$