

Worksheet 6.2.3

1. An exponential function, with asymptote $y=12$, passes through $(1, 18)$ and $(4, 32.25)$. Determine the equation of the appropriate exponential function.

2. Use log properties to solve each equation.

a) $\log x + \log 8 = 2$

b) $-6\log_3(x - 3) = -24$

c) $\log x + \log 7 = \log 37$

d) $\log(-2a + 9) = \log(7 - 4a)$

4) Convert the log expression $\log_2 30$ to one with base 8

5) Solve each equation. Leave each answer exact in terms of base 10 AND round to 3 decimal places.

a) $3^b = 17$

b) $5 \square 18^{6x} = 26$

c) $16^{n-7} + 5 = 24$

6) Solve the quadratic equation, $x^2 - 4x + 1 = 0$, using:

a) The quadratic formula

b) Completing the Square

7) Simplify $\frac{a^2}{a+5} + \frac{10a+25}{a+5}$ and $\frac{x^2}{x-y} - \frac{2xy-y^2}{x-y}$

8) Find the algebraic inverse

$$p(x) = 3(x^3 + 6) - 5$$

