



# MTH 30: Final Exam Review

## Part 3: Exponential and Logarithmic Functions

# Re-write the logarithms in exponential form

- $\log_6 x = 16$

- $\log_{\frac{1}{2}} a = c$

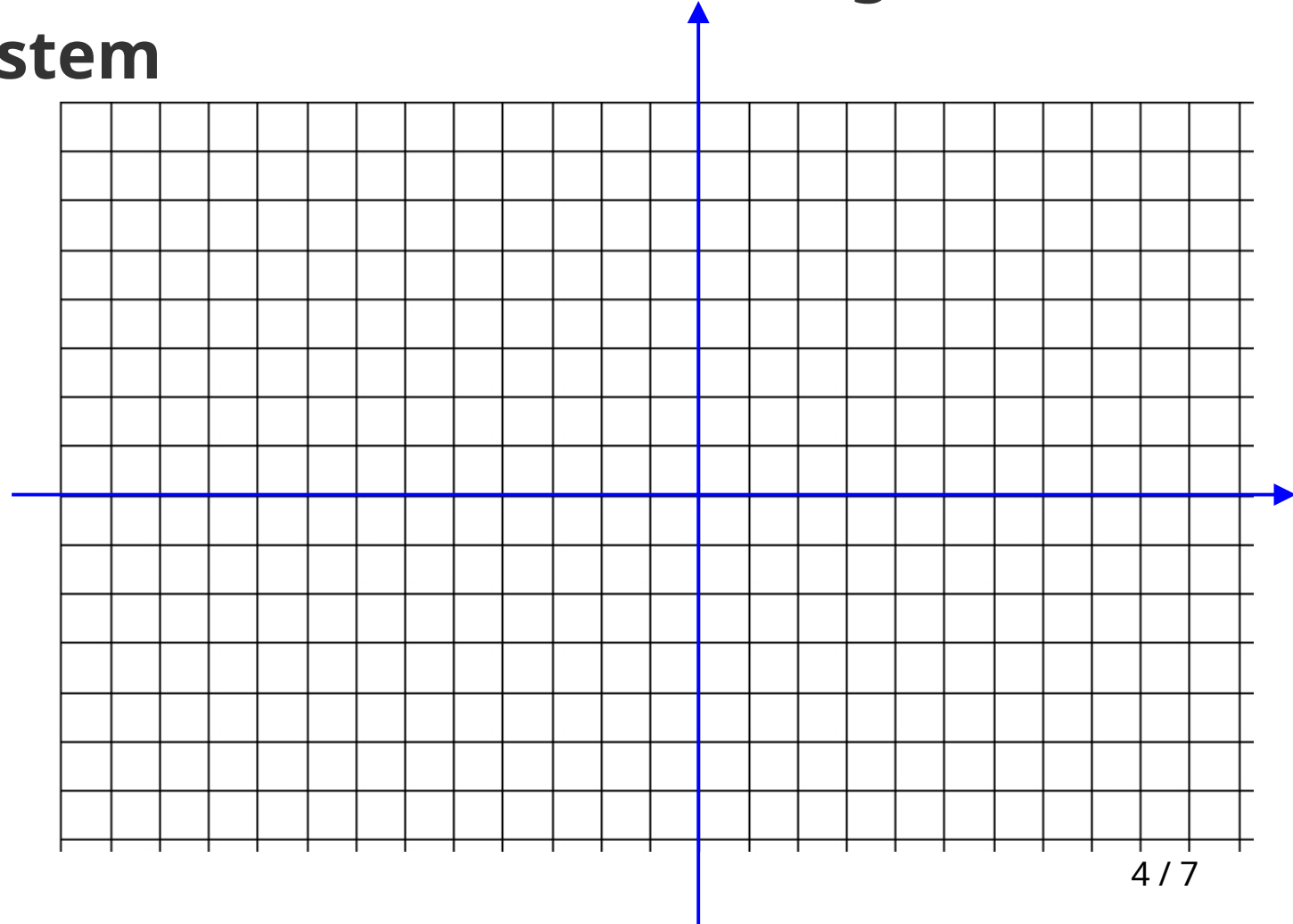
# Re-write the exponents in logarithmic form

- $a^{\frac{b}{2}} = 28$

- $\left(\frac{7}{k}\right)^{12} = 764$

# Graph the functions in the same rectangular coordinate system

- $f(x) = 4^x$
- $g(x) = \log_4 x$



**Use properties of logarithms to expand each logarithmic expression as much as possible. Where possible, evaluate logarithmic expressions without using a calculator.**

- $\log_7\left(\frac{x^2 y}{49}\right)$

- $\log\left(\sqrt[3]{100 x^2}\right)$

**Use properties of logarithms to condense each logarithmic expression. Write the expression as a single logarithm with coefficient 1.**

- $2 \log_3 x + \log_3 (x - 1)$
- $\frac{1}{2} \ln (x + 3) - \ln (x - 2) + 3 \ln x$

## Solve each equation

- $\log_2(3x - 8) = 4$
- $\ln(x + 4) - \ln(x + 1) = \ln 2$
- $e^{3x+1} = 245$