Pre-Calculus 12 **Ch. 7 Part II Review** **Name: _____**

A1. Write $\log_a(b+2)=c$ in exponential form.

A2. Write $y-1=3^{x+2}$ in logarithmic form.

B1. Evaluate: $\log_{\sqrt{5}} 125$

B2. Evaluate: $2\log_4 16+\frac{1}{3}\log_2\left(\frac{1}{8}\right)$

C. Use benchmarks to estimate the value of $\log_2 60$.

D1. Write $3\log a+\frac{1}{2}\log b-\frac{1}{4}\log c$ as a single logarithm.

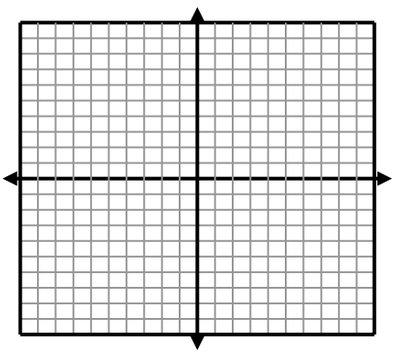
D2. Evaluate $\log_3\sqrt{54}-\log_3\sqrt{6}$.

D3. Write $\log\left(\frac{a^2}{bc^3}\right)$ in terms of $\log a$, $\log b$, and/or $\log c$.

D4. If $\log_3 x=2$ and $\log_3 y=5$, evaluate $\log_3\left(\frac{3x^2}{y}\right)$.

E. Evaluate to 3 decimal places: $\log_4 75$.

F. Sketch the graph of $y=\log_2(x+2)+1$.



G. Determine the domain, range, equation of the asymptote, and intercepts of the graph in F.

H1. Solve for x to 3 decimal places: $5^{x-3}=2^{x+1}$.

H2. Solve for x to 3 decimal places: $2^x = 3\left(4^{x+1}\right)$.

I1. Solve for x: $\log(x+11)+\log x = \log(x+1)+\log 6$.

I2. Solve for x: $\log_2(x+2)+\log_2 x = 3$.

J1. You invest $5000 in an account with a fixed interest rate of 3%/annum, compounded semi-annually. How long will it take for the investment to double?

J2. Parents plan to invest money for their newborn son so that he has $20 000 available for his education on his 18th birthday. Assuming a growth rate of 6% per year, compounded monthly, how much will they need to invest today?

J3. A radioactive isotope has a half-life of approximately 12 weeks. How much of a sample of 30 grams would remain after 50 weeks? (Round to the nearest hundredth of a gram)

K1. How many times as intense as a 6.3 magnitude earthquake is an 8.4 magnitude earthquake?

K2. How many times louder is a referee's whistle (125 dB) than a flute (89 dB)?

K3. Tomato juice has a pH level of 4.0 Determine the pH level of a solution that is 5 times more acidic.

L1. L1. Use natural logarithms to solve the exponential equation $5e^{x-2} = 120$ to 3 decimal places:

L2. Solve the following equation: $\ln(x+3)+\ln 3 = \ln(x^2-1)$

Answers:

A1. $a^c = b+2$ A2. $\log_3(y-1) = x+2$ B1. 6 B2. 3 C. approx 5.9 D1. $\log\frac{a^3\sqrt{b}}{\sqrt[4]{c}}$ D2. 1

D3. 2loga – logb – 3logc D4. 0 E. 3.114 F. translate 2 units left and 1 unit up.

G. Domain: x > –2, Range $y \in \mathbb{R}$, asymptote: x = –2, x-int: –1.5, y-int: 2 H1. 6.026 H2. –3.585

I1. x = 1 I2. x = 2 J1. 23.3 years J2.$6810.21 J3. 1.67 grams

K1. 125.9 times K2. 3981 times K3. pH 3.3 L1. x = 5.178 L2. x = 5, x = –2