Name: _____ Date: _____

PCH: Post Exam Practice Ms. Loughran

1. Solve for x: $\log_{\frac{1}{3}} \frac{2x+3}{x+1} = -2$

2. Solve for x: $(\log_{25} 27)(\log_{81} 125) = x$

3. Solve for x: $\log_3(\log_2(\log_5 x)) = 2$

4. Solve for x **using restriction sets:**

$$\sqrt{x-2}+\sqrt{3x+1}=3$$

5. Solve for x: $\log_2(2x+3)=-1+\log_2(x-1)$

6. Rewrite in terms of log A, log B, and log C: $\log\sqrt[4]{\dfrac{(AB^3)^4}{C}}$

7. Solve for x: $\log_3(64x^3 + 27) - \log_3(16x^2 - 12x + 9) = 3$

8. Solve for x: $\ln(x + 2) - \ln(4 - x) = 2$

9. A parabola has vertex $(4,-1)$ and focus $(4,1)$. Write the equations of the parabola, the directrix and the axis of symmetry.

Equation: _____

Directrix: _____

Axis of Symmetry: _____

10. A parabola has a directrix $x=-\frac{7}{8}$ and vertex at $(-1,-5)$. Write the equation of the parabola, make a sketch of the parabola (including 2 additional points), and state the coordinates of the focus.

Equation: _____

Focus: _____

Coordinates of Additional Points: _____

11. Solve for x **using restriction sets:**

$$2x = 1 - \sqrt{2 - x}$$

12. Solve for x: $(\ln x - 3)^3 + (\ln x - 3)^2 = 9(\ln x - 3) + 9$

13. Find the domain and range of each of each of the following functions:

(a) $y = \ln(x + 2) - 3$

(b) $y = \ln(x - 3) + 2$

(c) $y = e^{x+2} - 3$

(d) $y = e^{x-3} + 2$