Practice Exam II

*Note: This exam is 2-3 times longer than the actual exam.

① Find the inverse of the function

a) $f(x) = \frac{x+1}{x-2}$

b) $f(x) = 3 - \frac{1}{x}$

② Graph the function. Include the vertex, axis of symmetry, max or min value and intercepts.

$y = x^2 - 6x - 27$

③a) Determine the input that produces the largest or smallest output.

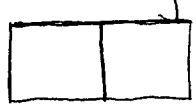
$f(x) = -2x^2 + 9x$

b) Is the output the largest or smallest?

④ The volume of a right circular cyl. is given by $V = \pi r^2 h$.

If the cyl. is as wide as it is tall, then express the volume in terms of its height.

⑤ Suppose you have 1200 m of fencing to build two identical adjacent rectangular corrals.



Write an equation for the total area in terms of one variable.

(6) a) Find the point on the line $y = 2x$ that is closest to the point $(6, 2)$.

b) what is the minimum distance?

(7) Graph the function. Specify the domain, x & y intercepts, V.A and H.A.

a) $f(x) = \frac{x^2 - 9}{x + 2}$

b) $f(x) = \frac{4}{(x-3)}$

(8) Sketch the graph of

a) $y = e^x$

b) $y = e^{-x} + 1$

c) $y = \log_b x$

(9) Solve for x

a) $2^{x+1} = \sqrt{2}$

b) $9^x = \frac{1}{27}$

(10) Write in logarithmic form

$5^x = 17$

(11) Write the equation in exponential form

$\log_6 10 = y$

(12) Find the domain of

a) $y = \ln(x+1)$ b) $y = \frac{1}{\log x}$