Exp WS   **Name:**

| **Part I** | **Part II** |

Part I

1. Consider the relation

$$A = \{\{a, 4\}, \{b, 3\}, \{q, 7\}\}$$

   (a) Is A a function?
   (b) Is A injective (one to one)?
   (c) What is the domain of A
   (d) What is the range of A
   (e) What is inverse function A^{-1}?

2. Consider the relation

$$B = \{\{bee, honey\}, \{cow, milk\}, \{goat, milk\}\}$$

   (a) Is B a function?
   (b) Is B injective (one to one)?
   (c) What is the domain of B
   (d) What is the range of B
   (e) IS there an inverse function B^{-1}?

3. Consider the relation

$$f(x) = 3x - 5$$

   (a) Is f a function?
   (b) Is f injective (one to one)?
   (c) What is the domain of f
   (d) What is the range of f
   (e) What is inverse function f^{-1}?

4. Consider the relation

$$g(x) = (x + 1)^2 - 5, x \geq -1$$

   (a) Is g a function?
   (b) Is g injective (one to one)?
   (c) What is the domain of g
   (d) What is the range of g
   (e) What is inverse function g^{-1}?

Part II

5. $x = 4^{1/2}$

6. $x = 2^{-2}$

7. $x = 9^{-3/2}$

8. $x = 2^{-1/2}$

9. $2^x = 8$

10. $10^x = 1,000$

11. $5^x = \dfrac{1}{125}$

12. $\left(\dfrac{1}{9}\right)^x = 3$

    (ie, $\log_{1/9} 3 = ?$)

13. $2^{2x+1} = 8$

14. $10^{x^2-1} = 1,000$