In-Class Problems 6 for Monday, February 12

These problems are from Pre-Class Problems 6.

1. Find the domain of the following functions. Write your answer in interval notation.

   a. $g(x) = \sqrt{3x - 36}$

   b. $r(x) = \dfrac{49 - x^2}{12x^2 + 28x - 80}$

   c. $h(x) = \dfrac{\sqrt[4]{5 - x}}{x^2 - 9x + 18}$

   d. $f(x) = \sqrt[3]{\dfrac{27x + 1}{x + 8}}$

2. If $f = \{(-6, 9), (-3, 2), (1, 7), (2, 9), (5, -6)\}$, then find the following.

   a. the domain of f

   b. the range of f

   c. $f(-6)$

   d. $f(1)$

   e. the value(s) of x for which $f(x) = 2$

   f. the value(s) of x for which $f(x) = 9$

3. If $g(x) = 3x^2 - 8x - 12$, then find $\dfrac{g(x + h) - g(x)}{h}$.

4. Betty wishes to fence a rectangular region of area 500 square yards. Express the amount F of fencing that is required as function of x, which is the length of the rectangle.