

- Show all your work for each problem; show enough work to fully justify your answer.
- Simplify all answers as far as possible.

(1) [Points: 10] Find  $dy/dx$  if  $a^2x^3 = b^3y^2 + a^4b^4$ , where  $a$  and  $b$  are constants (as usual).

(2) [Points: 25] The function  $f(x) = 6x^{2/3} - 4x^{1/3}$  is defined on the interval  $[-2, 2]$ .

- Find all local maxima and also all local minima of  $f(x)$  on that interval.
- Which (if any) are absolute maxima? absolute minima?
- Where is  $f$  increasing or decreasing?