Math-19 Homework #3

<u>Problems</u>

1). Simplify the following expression. Your answer should contain no radicals and no negative exponents. You may assume that $a, b, c > 0$.

$$\frac{a^2 b^{-3}\sqrt{abc^3}}{\sqrt[3]{a^{-2}\sqrt{b^3 c}}}$$

2). Determine whether each of the following statements is either correct, incorrect, or misleading. Explain why incorrect and misleading statements are incorrect or misleading.

a). $\sqrt{9} = \pm 3$

b). $\left(x^{\frac{1}{2}}\right)^2 = |x|$

c). $(x^2)^{\frac{1}{2}} = x$

d). $(x^3)^{\frac{1}{3}} = |x|$

3). Expand the following expression. Your answer should contain no radicals:

$$(xy^2 - z\sqrt{y})^2$$

4). Factor an xy^2 out of $x^2 y - 2$.

5). Simplify completely. Leave everything in factored form.

$$\frac{2}{x-3} + \frac{4x}{x+3} - \frac{6}{x^2 - 9}$$