

Name : _____ ID. # : _____ SER. # : _____

1. (a) Find the product and then simplify: $(\sqrt{x} - 2\sqrt[3]{x})^2$ (3.5 pts)

(b) Rationalize the denominator and simplify: $\frac{\sqrt{x} + \sqrt{y-1}}{\sqrt{x} - \sqrt{y-1}}$ (3 pts)

2. (a) Give an example of a trinomial of degree 6 and with leading coefficient -2 . (2 pts)

(b) Perform the indicated operations and simplify: $(2x - 3)^3 - x(3x - 2)^2$ (3 pts)

3. Factor as completely as possible:

(a) $4yx^3 - 32y$

(3 pts)

(b) $x^4 + 4x^2 + 4 - a^2$

(3.5 pts)