

## Math-19 Homework #4

### Problems

- 1). Rationalize the denominator and simplify completely. Your final answer should have no radicals and no negative exponents. Be careful to use absolute value where necessary.

$$\frac{xyz}{\sqrt[3]{x^2y^6z^4}}$$

- 2). Consider the quadratic equation  $2x^2 + 5x - 7 = 0$ .

- a). Solve for  $x$  by completing the square.
- b). Solve for  $x$  using the quadratic formula.

- 3). Solve for  $x$ :

$$\frac{5}{x+2} - \frac{x+5}{x-2} + \frac{28}{x^2-4} = 0$$

- 4). Solve for  $x$ :

$$4(x+1)^{\frac{1}{2}} - 5(x+1)^{\frac{3}{2}} + (x+1)^{\frac{5}{2}} = 0$$

- 5). A man stands atop a  $256ft$  cliff with a ball.

- a). How long does it take for the ball to hit the ground if he simply releases the ball?
- b). How long does it take for the ball to hit the ground if he throws the ball up with a velocity of  $16ft/s$ ?
- c). How long does it take for the ball to hit the ground if he throws the ball down with a velocity of  $16ft/s$ ? (Hint: no additional calculations are needed).
- d). Assume that a lady is standing on the ground below the cliff and throws a ball up so that it passed the man on the cliff at a velocity of  $16ft/s$ . How long would it be before the ball hits the ground? (Hint: you already have all the information that you need).