

Last Name: SOLUTIONS

First Name: _____

Student ID: _____

Quiz 2 (B)

Question 1. (3 marks) Find all values of θ on the interval $[0, 2\pi]$ that satisfy:

$$\csc \theta = \sqrt{2}$$

$$\theta = \pi/4, 3\pi/4$$

Question 2. (4 marks) Simplify the following expression:

$$\frac{(2x+1)^{1/2} - (x+2)(2x+1)^{-1/2}}{2x+1} = \frac{(2x+1)^{1/2} - \frac{x+2}{(2x+1)^{1/2}}}{2x+1}$$

$$= \frac{\frac{(2x+1) - (x+2)}{(2x+1)^{1/2}}}{2x+1} = \frac{x-1}{(2x+1)^{1/2}} \cdot \frac{1}{2x+1} = \frac{x-1}{(2x+1)^{3/2}}$$

Question 3. (3 marks) Rationalize the numerator:

$$\frac{1+\sqrt{x+2}}{\sqrt{x+2}} \cdot \frac{1-\sqrt{x+2}}{1-\sqrt{x+2}} = \frac{1+\sqrt{x+2} - \sqrt{x+2} - (x+2)}{\sqrt{x+2}(1-\sqrt{x+2})}$$

$$= \frac{-x-1}{\sqrt{x+2}(1-\sqrt{x+2})}$$