

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

1. Simplify the following expressions:

(a) $\frac{1}{x^2 + 7x + 12} + \frac{1}{x^2 - 9} + \frac{1}{x^2 - 16}$ (3.5 pts)

(b) $2 - \frac{x}{1 - \frac{1-x}{-x}}$ (3.5 pts)

2. (a) Are the two equations equivalent? $3x - 11 = -5$ and $\frac{4x-2}{x-2} = \frac{6}{x-2}$
(explain) (2 pts)

(b) Solve the equation: $|x| + |x - 3| = 5$

(4 pts)

3. (a) Find the real and imaginary parts of the complex number:
 $(3 + 2i)^2 - \frac{1}{3 + i}$

(3 pts)

(b) Solve the quadratic equation by completing to a perfect square:
 $3x^2 + 15x + 24 = 0$

(3 pts)