



2. [3] Use algebra to solve for  $q$  in

$$\cancel{x}^{-1} + \frac{1}{q+1} = 3$$

legal steps (+.5)  
 clear den (+.5)  
 got it (+.5)  
 alg/numbers (+.5)  
 reasonable start (+.5)

$$\cancel{q+1} \frac{1}{q+1} = 4 (q+1)$$

$$\frac{1}{4} = \frac{\cancel{4}(q+1)}{4}$$

$$\frac{1}{4} = q+1$$

$$\frac{1}{4} - \frac{4}{4} = q$$

$$\frac{1}{4} - \frac{4}{4} = \frac{-3}{4} = q$$

3. [3] Perform the indicated operation and simplify  $\frac{2}{x^2+x} - \frac{3}{x^2}$ .

$$\begin{array}{r} x \\ x \end{array} \frac{2}{x(x+1)} - \frac{3}{x \cdot x} \frac{(x+1)}{(x+1)}$$

common den (+.5)  
 dist neg (+.5)  
 reduced (+.5)  
 alg/numbers (+.5)  
 add frac (+.5)

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

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