

2. (5 points) Eliminate all radicals from the numerator and simplify:

$$\frac{\sqrt{x+7}-3}{x-2}$$
$$= \frac{\sqrt{x+7}-3}{x-2} \cdot \frac{\sqrt{x+7}+3}{\sqrt{x+7}+3} = \frac{(x+7)-9}{(x-2)(\sqrt{x+7}+3)}$$
$$= \frac{x-2}{(x-2)(\sqrt{x+7}+3)} = \frac{1}{\sqrt{x+7}+3}$$

3. (5 points) Add the following and write the answer in factored form if possible:

$$\frac{1}{x+2} + \frac{4}{x^2-x-6}$$
$$= \frac{1}{x+2} + \frac{4}{(x-3)(x+2)} = \frac{x-3}{(x+2)(x-3)} + \frac{4}{(x-3)(x+2)}$$
$$= \frac{(x-3)+4}{(x-3)(x+2)} = \frac{x+1}{(x-3)(x+2)}$$