Solve the following two problems, showing all your work.

(1) Using the epsilon-delta (ε-δ) definition of limit, prove that

$$\lim_{x \to 2} \frac{x}{3 - x} = 2.$$

(2) Find the following limit (using any methods you've learned so far from lecture, homework, or the course text):

$$\lim_{x \to 3} \frac{\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{x}}}{x - 3}.$$