

Evaluate the following limits.

$$\text{a) } \lim_{x \rightarrow 2} \sqrt{\frac{4x^2 - 3x - 10}{x - 2}} = \lim_{x \rightarrow 2} \sqrt{\frac{(4x - 5)(x/2)}{(x/2)}}$$

$$= \lim_{x \rightarrow 2} \sqrt{(4x - 5)} = \sqrt{3} .$$

$$\text{b) } \lim_{x \rightarrow 9} \frac{\sqrt{x} - 3}{x - 9} = \lim_{x \rightarrow 9} \frac{(\sqrt{x} - 3)(\sqrt{x} + 3)}{(x - 9)(\sqrt{x} + 3)}$$

$$= \lim_{x \rightarrow 9} \frac{(x - 9)}{(x - 9)(\sqrt{x} + 3)} =$$

$$\lim_{x \rightarrow 9} \frac{1}{\sqrt{x} + 3} = \frac{1}{6} .$$