

Student ID		

Last Name: _____

First Name: _____

Show all your work.
If necessary, use extra sheets.

When appropriate,
BOX your final answer.

MA1
Homework

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$$1. \lim_{x \rightarrow 2} \frac{\sqrt{x} - \sqrt{2}}{x - 2} =$$

$$2. \lim_{x \rightarrow 4} \frac{4 - x}{2 - \sqrt{x}} =$$

$$3. \lim_{x \rightarrow 25} \frac{x - 25}{5 - \sqrt{x}} =$$

$$4. \lim_{x \rightarrow 9} \frac{\sqrt{x} - 3}{x^2 - 9x} =$$

$$5. \lim_{x \rightarrow 0} \frac{\frac{1}{x+2} - \frac{1}{2}}{x} =$$

$$6. \lim_{t \rightarrow 9} \frac{t^2 - 81}{\sqrt{t} - 3} =$$

$$7. \lim_{x \rightarrow 0} \frac{\sqrt{x^2 + 9} - 3}{x^2} =$$

$$8. \lim_{x \rightarrow 0} \frac{\sqrt{3+x} - \sqrt{3}}{x} =$$

$$9. \lim_{x \rightarrow 0} \frac{x}{\sqrt{1+3x} - 1} =$$

*10. *Challenge Problem.* (Optional—Do on separate sheet.)

Show algebraically that $\lim_{x \rightarrow 1} \frac{\sqrt{x} - x^2}{1 - \sqrt{x}} = 3$.