Limits
Rensselaer Calculus Skills Practice Page

No calculators will be allowed and no partial credit will be given.

1. Evaluate the limit \( \lim_{x \to 1} \frac{x^2 + 2x + 4}{x + 2} \). Express your answer in simplified form.

2. Evaluate the limit \( \lim_{x \to -1} \frac{6x + 2}{2x + 7} \). Express your answer in simplified form.

3. Evaluate the limit \( \lim_{x \to 5} \frac{x^2 - 3x - 10}{x - 5} \). Express your answer in simplified form.

4. Evaluate the limit \( \lim_{t \to 0} \frac{(t + 4)^2 - 16}{t} \). Express your answer in simplified form.

5. Find the value of \( \lim_{x \to 5} \frac{3x^2 - 75}{x - 5} \). Express your answer in simplified form.

6. Find the value of \( \lim_{x \to 5^+} (\ln (3x^2 - 75) - \ln (x - 5)) \). Express your answer in simplified form.

7. Find the value of \( \lim_{x \to 5} \left( e^{\frac{1}{x-5}} \right)^{(3x^2-75)} \). Express your answer in simplified form.

8. Evaluate the limit \( \lim_{x \to 16} \frac{16 - x}{4 - \sqrt{x}} \). Express your answer in simplified form.
1. $\frac{7}{3}$
2. $-\frac{4}{5}$
3. 7
4. 8
5. 30
6. $\ln(30)$
7. $e^{30}$
8. 8