

# Math 131 - Quiz 11

April 27, 2022

Name \_\_\_\_\_

Score \_\_\_\_\_

Show all work to receive full credit. Supply explanations when necessary. This quiz is due May 2.

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1. (6 points) Evaluate each limit.

(a)  $\lim_{x \rightarrow \infty} \frac{x^3}{e^{x/2}}$

(b)  $\lim_{x \rightarrow \infty} \frac{x}{\sqrt{x^2 + 1}}$

(c)  $\lim_{x \rightarrow 0^+} x^3 \cot x$

(d)  $\lim_{x \rightarrow 1^+} \left( \frac{3}{\ln x} - \frac{2}{x-1} \right)$

*Turn over.*

2. (4 points) Evaluate each indefinite integral.

(a)  $\int (2x^3 + \sin x) dx$

(b)  $\int (\sqrt{x} + \sqrt[5]{x^3}) dx$

(c)  $\int \left( \frac{5}{x} + 3 \sec^2 x \right) dx$

(d)  $\int \left( \frac{1}{x^2 + 1} + \frac{1}{x^2} \right) dx$