

TUTORS: THIS IS A TAKE HOME QUIZ

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FOR THIS QUIZ, YOUR FINAL ANSWERS MAY REQUIRE RADICALS, LOGS, e AND  $\pi$ .

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Find the linear approximation of  $f(x) = e^{3x}$  at  $x = \ln 2$ . Use the approximation to estimate  $f(1)$ .

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Find the linear approximation of  $f(x) = \tan x$  at  $x = \frac{\pi}{4}$ . Use the approximation to estimate  $f\left(\frac{3}{4}\right)$ .

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Use an appropriate linear approximation to estimate  $\sec 1$ .

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Use an appropriate linear approximation to estimate  $\sqrt[4]{79}$ .

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