

ANSWERS: SAMPLE FINAL 2 FROM GCC MATH WEBSITE

1. a) $(0, \infty)$
b) $x = 1, -1$
2. $\frac{(3x + 4) \cosh(x) - 3 \sinh(x)}{(3x + 4)^2}$
3. Limit does not exist (6 from right and -6 from left)
4. 2
5. $a = 3, b = 0$
6. $\delta = \min \left\{ 1, \frac{\varepsilon}{6} \right\}$, see proof method in book
7. $-\frac{1}{2(x-3)^{3/2}}$
8. $-\frac{1}{6} + \frac{\sqrt{2}}{3}$
9. $\frac{6y^2 - 4x^2}{9y^3}$
10. $x = 48, y = 32$
11. $c = \frac{2}{\ln 3} + 1$
12. Maximum: $f(\sqrt{2}) = 2$
Minimum: $f(-\sqrt{2}) = -2$
13. $2\pi - 3$
14. $-2^{5/2}$
15. 5.004
16. $\frac{1}{3}e^{\tan^{-1} x} + c$