

MATH 140A
Fall Semester 2002
Exam I
September 23, 2002

ANSWERS:

1. (A); 2. (D); 3. (D); 4. (E); 5. (D); 6. (A); 7. (A); 8. (D); 9. (D); 10. (A); 11. (C).

12. a. (F); b. (F); c. (T); d. (F); e. (T); f. (T); g. (T).

13. a. 6; b. 5; c. The Sandwich Theorem (The Squeeze Law); d. (T).

14. Removable discontinuity at $x = -2$; Infinite discontinuity at $x = 2$; Jump discontinuity at $x = 3$; Infinite discontinuity at $x = 4$; ($x = 0$ is not a discontinuity: it is not within the domain of the given part of the function.)

15. a. $f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$

b. $f'(x) = \frac{a}{2\sqrt{ax}}$ or $\frac{\sqrt{a}}{2\sqrt{x}}$