

Math 140 Exam 1

Fall 2003 Answers

1.d, 2.b, 3.b, 4.a, 5.d, 6.e, 7.c, 8.a, 9.b, 10.a

11. 4

12.(a) $f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$ OR $f'(x) = \lim_{b \rightarrow x} \frac{f(b) - f(x)}{b - x}$ (b) $-\frac{1}{x^2}$

13.(a) $v(t) = 3t^2 - 6t$ (b) 9 ft/sec (c) $t = 0$ and $t = 2$ sec (d) $t < 0$ or $t > 2$ (e) 8 ft

14. One such graph would consist of

- (a) the line segment from $(-5, -2)$ to $(0, 2)$ including $(-5, -2)$ but not including $(0, 2)$
- (b) the line segment from $(0, 2)$ to $(2, 1)$ not including either endpoint
- (c) the connected line segments from $(2, 3)$ through $(3, 0)$ continuing on to $(5, 1)$ not including $(2, 3)$ but including $(5, 1)$
- (d) the points $(0, 1)$ and $(2, 0)$

Keep in mind that there are many correct answers for #14, so if you're not sure whether your variation is correct, please ask your instructor.