

MATH 140A  
Fall Semester 2003  
Exam I  
September 29, 2003

**ANSWERS:**

**1. A; 2. B; 3. C; 4. D; 5. A; 6. E; 7. D; 8. C; 9. C; 10. E.**

**11. a. T; b. F; c. T; d. T.**

**12. a. T; b. T; c. T; d. F; e. T.**

**13.** Removable discontinuity at  $x = -1$ ; Infinite discontinuity at  $x = 1$ ; Infinite discontinuity at  $x = 4$ ; ( $x = 2$  is not a discontinuity: it is not within the domain of the given part of the function;  $x = 3$  is not a discontinuity, either:  $f(x)$  is defined at  $x = 3$  with  $f(3) = \frac{3}{2}$ , and both one-sided limits exist at  $x = 3$  and are  $\frac{3}{2}$ , so  $x = 3$  is a continuous point.)

**14. a.** vertex at  $(1,-8)$ ; **b.** the y-intercept is  $(0,-9)$  and there is no x-intercepts.

**15.  $a = -2, b = 6, c = -4.$**