

MAC 1140 Test I Review Spring 2011

L1-L6, students should also know all lecture material, including the 'practice' problems

1. (a)  $\frac{14-x}{2}$   
(b) 8
2. (a) (D: all real numbers),  $x = -\frac{5}{3}, -3$   
(b) (D :  $x \neq 0$ ),  $x = -8$   
(c) (D :  $x \neq 0, -4$ ),  $x = 16, -1$   
(d) (D :  $x \neq \pm 3$ ),  $x = \frac{13}{6}$   
(e) (D :  $x \neq -1, 2$ ),  $x = -\frac{38}{11}$
3. (D :  $x \neq 0, 3$ ),  $\emptyset$
4. (a)  $[-7, -3]$   
(b)  $(-\infty, -5] \cup [-3, \infty)$   
(c)  $[-\frac{3}{2}, \frac{9}{2}]$
5. (a)  $[-\frac{1}{4}, \frac{8}{3})$   
(b)  $\emptyset$
6. (a)  $\emptyset$ , (ie. No Real solution)  
(b) 1 repeat real solution,  $x = -\frac{1}{6}$   
(c)  $\emptyset$ , (ie. No Real solution)  
(d) 2 distinct real solution,  $\frac{-3 \pm \sqrt{33}}{2}$
7.  $k = -\frac{1}{2}$
8. (a)  $x = \pm 2, -\frac{1}{2}$   
(b)  $x = \pm 1, \pm 7$   
(c)  $x = 16, 81$   
(d)  $x = -63, 28$   
(e)  $x = \sqrt[3]{3}$   
(f)  $x = -\frac{5}{4}$   
(g)  $x = \emptyset$
9. (a)  $x = 4$   
(b)  $x = 3, -1$   
(c)  $x = 81$

10.  $-4$
11. (a) F  
(b) F  
(c) F  
(d) T
12. (a) rational:  $-\frac{4}{9}, -\sqrt{16}, 0, -2, \sqrt{0.009}, 0.\bar{8}, 3^3.12.2$   
(b) irrational:  $\frac{\pi}{6}, \sqrt{5}$
13. (a)  $\frac{5\sqrt[4]{2}}{2}$   
(b)  $\frac{(\sqrt{2}-\sqrt{3})(5+\sqrt{10})}{15}$
14.  $-690$
15.  $47$
16.  $\emptyset$
17. (a)  $2x$   
(b)  $\frac{1}{2}x$