Answer Key

Math 1151
Spring 2003 Final Exam

Multiple Choice Problems

1. A
2. D
3. E
4. C
5. C

6. B
7. A
8. B
9. A
10. D

11. E
12. C

Written Answer Problems

13. $\theta = \pi/2\ ,\ 5\pi/6\ ,\ 7\pi/6\ ,\ 3\pi/2$

14. hyperbola --
center: (-2, 1) ; vertices: (-2, -1), (-2, 3) ;
see graph below

15.
a) $f(x) = (x - 1) (x + 1) (x^2 - 8x + 17)$
b) $x = -1\ ,\ 1\ ,\ 4 \pm i$

16. see graph on other side

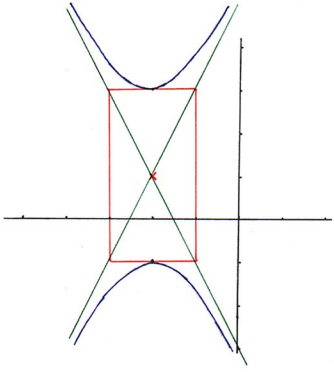
17. See solution set for proof

18. $AD + DE + EB \approx 6.222$

19.
a) $z = 1 [\cos (\pi/4) + i \sin (\pi/4)]$
b) $z^3 = 1 [\cos (3\pi/4) + i \sin (3\pi/4)]$
c) $w_0 = 1 [\cos (\pi/12) + i \sin (\pi/12)]$,
$w_1 = 1 [\cos (3\pi/4) + i \sin (3\pi/4)]$,
$w_2 = 1 [\cos (17\pi/12) + i \sin (17\pi/12)]$

20. $(15\sqrt{5} - 2\sqrt{11}) / 42$

graph for #14:



graph for #16: