

MAT 114 Fall 2004 Final Answer Key

Note: Problems marked N/A are not on this year's syllabus (Spring 2007)

Multiple choice

1. D; 2. E; 3. C; 4. D; 5. B; 6. F, F, T, N/A; 7. B; 8. C; 9. F; 10. B.

Free response

1. $-1 + \sqrt{3}i = 2e^{i(2\pi/3+2n\pi)}$, so the fourth roots are:

$$2^{1/4}e^{i(\pi/6+n\pi/2)}$$

for $n = 0, 1, 2, 3$.

2. Answer: $5 + \sqrt{35}$ sec (assuming $g = 30$ ft/sec²).

3. Answer:

$$y = c_1e^{-x} + c_2xe^{-x} - \frac{18}{25}\sin 2x - \frac{24}{25}\cos 2x$$

4. Answer: i)- e; ii)-a; iii)-c; iv)-d; v)-b.