

Answers to Math 103 Final Exam – Spring 2005

1 a) $\frac{3\ln(3)}{2}$ (b) $\frac{2}{5}$

2. $y = \frac{4}{27}(x-3) + 2$

3. $f(x) = 5 - e^x$ $a = 0$ $b = \ln(5)$ $Area = 5\ln(5) - 4$

4. $Global\ max = 4e^{-2} + 3$ $Global\ min = 3$ $\lim_{x \rightarrow \infty} f(x) = 3$

5 a) $\ln(3) - \ln(2)$ b) $5\ln(2) + 2\sqrt{6} - 2\sqrt{3}$

6. $\frac{\sqrt{3}}{6}$

7. $\frac{16}{3}$

8 Length = 16 Width = 8

9. b, d, and f

10 $\frac{2\pi}{3}$

11 $a = -\frac{1}{2}$ $b = 1$ $c = 2$ $d = 4$

$a = 1$ $b = -1$ $c = 4$ $d = -2$

12 $f(x) = 5, 4, 5, 8, 13, 19, 25, 29, 29, 25$

i) 1

ii) 7.5

iii) $0 \leq x < 4$

iv) $1 < x < 7.5$