

Math III Semester 2 Final Exam Extra Credit Key

1. 4
2.  $8x$
3. -2
4. -3
5. 4
6. 2
7.  $2x$
8.  $5x$
9.  $\log_3 6 + 2 \log_3 x + 3 \log_3 y$
10.  $\log_4 7 + \frac{5}{2} \log_4 x$
11.  $\ln \frac{3x}{2y^4} = \ln 3 + \ln x - \ln 2 - 4 \ln y$
12.  $\ln 25$
13.  $\log_5 \frac{40}{9}$
14.  $\log 2x^4$
15.  $y = 4^x - 3$
16.  $y = \ln x - 2$
17. a)  $A \approx \$9988.38$   
b)  $t \approx 22.66$  years
18.  $P \approx \$8926.79$
19.  $P \approx \$4176.41$
20. a)  $A \approx \$4799.13$   
b)  $t \approx 20.94$  years
21. a)  $y = 65000(1.04)^t$   
b)  $y \approx 82245.7$   
About 82245 people  
c) In 2009 ( $t \approx 10.98$ )
22.  $t \approx 4.6$  years
23. 0
24.  $\sqrt{3}$
25.  $-\frac{\sqrt{2}}{2}$
26.  $\frac{1}{2}$
27. 0
28.  $-\frac{1}{2}$
29.  $\frac{2\sqrt{3}}{3}$
30. 0
31.  $\sin \theta = -\frac{5}{13}, \cos \theta = -\frac{12}{13}, \tan \theta = \frac{5}{12}$   
 $\csc \theta = -\frac{13}{5}, \sec \theta = -\frac{13}{12}, \cot \theta = \frac{12}{5}$
32.  $60.17^\circ$
33.  $55.1^\circ$
34. 74.9 ft
35. 72 to 92; 81.5%
36. 68 % from \$714 to \$944;  
 $P(x > 1000) \approx 6.81\%$ ; expect about 61 people to pay more than \$1000
37. (0.41, 0.48)
38. a) Observational Study  
b) Experiment  
c) Survey
39. b) i. 16% ii. 81.5% iii. 97.5%  
c) i. 1.5 ii. -1.75 iii. -2.35  
iv. 2.5 v. 2.25  
d) i. 93.32% ii. 95.99% iii. 94.77%
40. 57%
41. a)  $\pm 0.1236$  b) (0.224, 0.496)  
c) Increase sample size
42. (67.3, 73.7)
43. a) (16.81, 19.59)  
b) Above the recommendation
44.  $1204 \text{ mm}^3$
45. a) Hexagon  
b) Rectangle
46.  $x \approx .06$
47.  $x \approx 6.76$  (-3.76 is extraneous)
48.  $x \approx .16$
49.  $x \approx -1.44$

# Math III Semester 2 Final Exam Extra Credit Key

50.  $x \approx -0.32$

51.  $x = 1024$

52.  $x \approx 7.77$  (-.77 is extraneous)

53.  $x = -8, -4$

54.  $\frac{13}{5}$

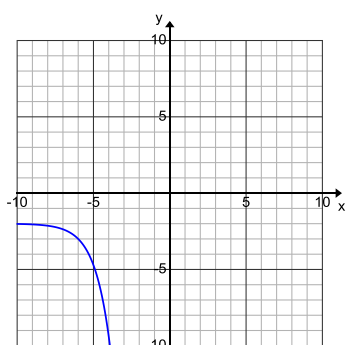
55.  $\frac{4}{3}$

56.  $\frac{3}{10}$

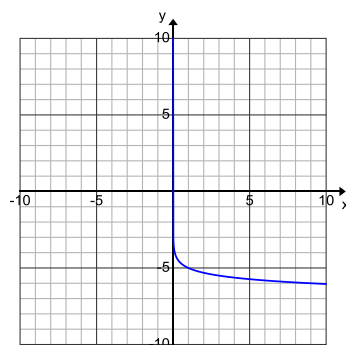
57. 9

58. 219

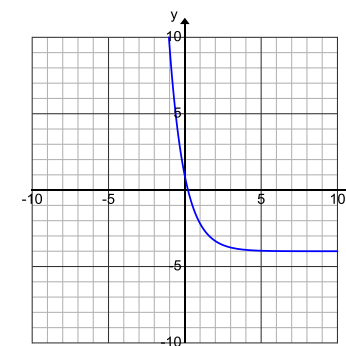
59.



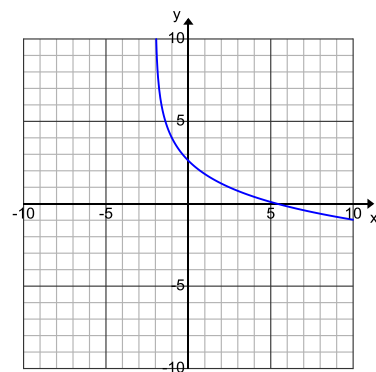
60.



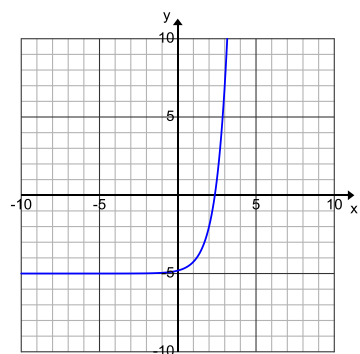
61.



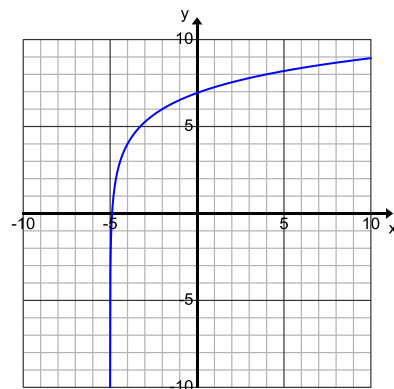
62.



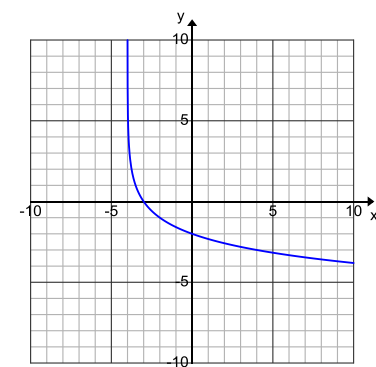
63.



64.

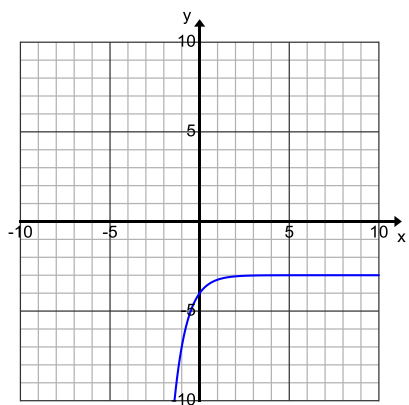


65.

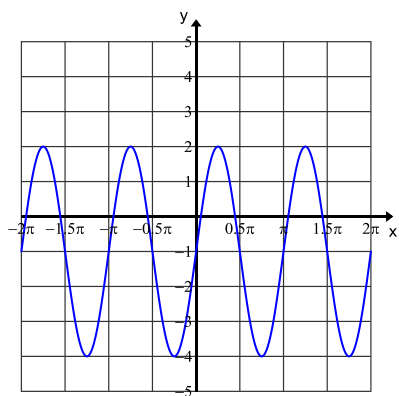


# Math III Semester 2 Final Exam Extra Credit Key

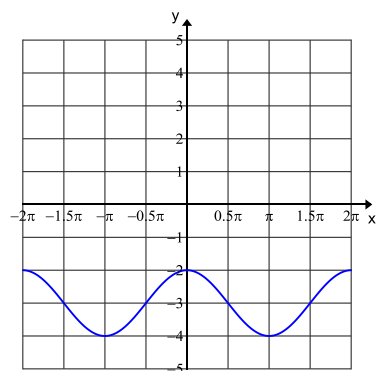
66.



67.



68.



69.

