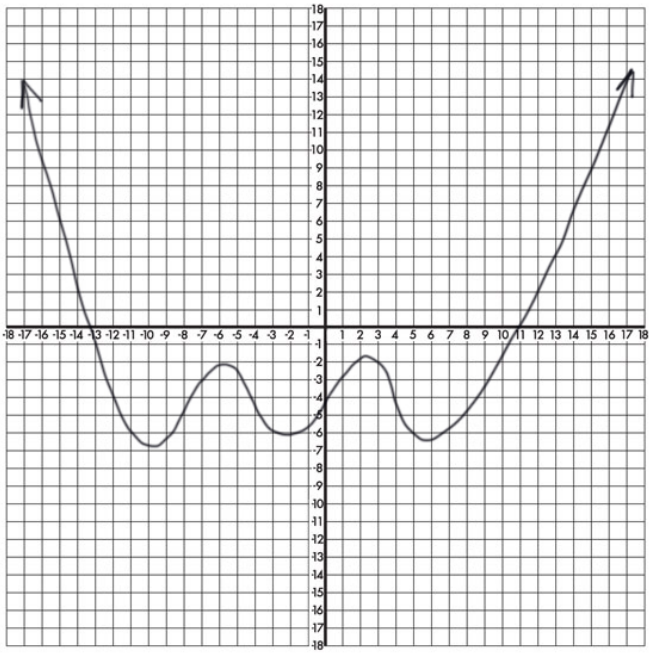
Pre-Calculus Homework #7 – Answer Key

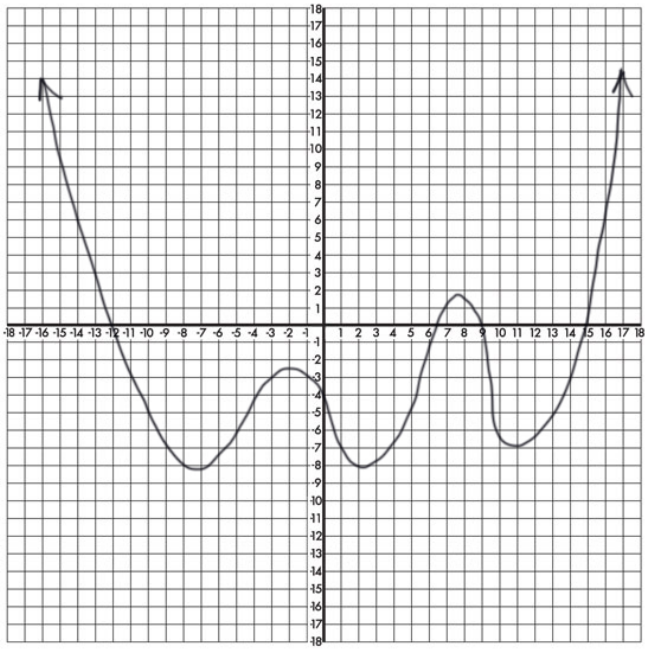
1) $A = -(x-85)^2 + 7225$ width = 85 length = 85 Area = 7225

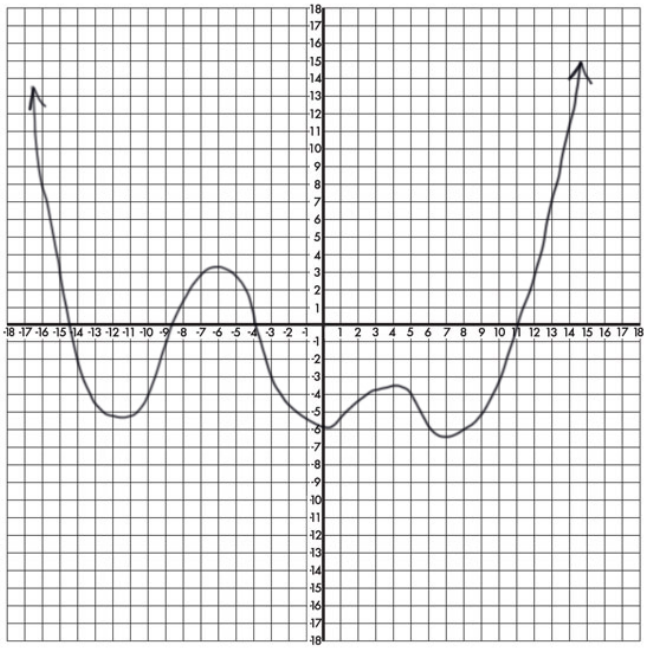
2) 6 pm

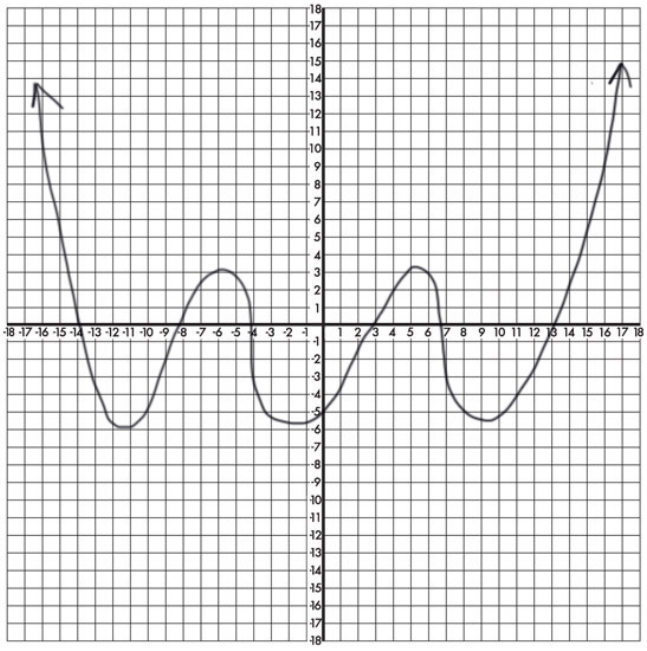
3)

Positive Real Roots	Negative Real Roots	Imaginary Roots
1	1	4
3	1	2
1	3	2
3	3	0





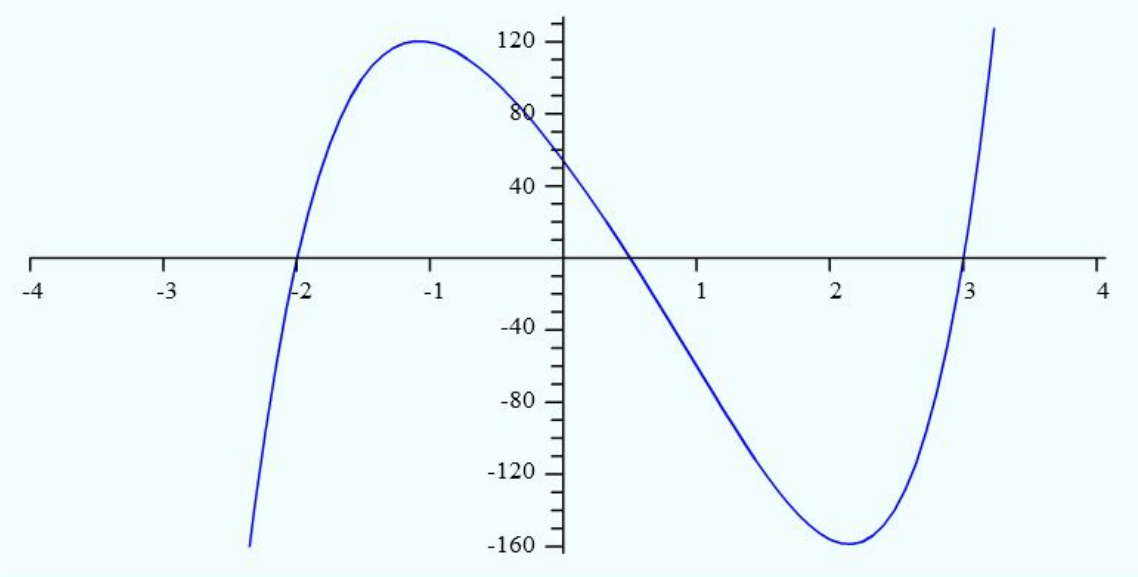




4) oblique asymptote: $y = -5x - 26$ vertical asymptotes: $x = 3, x = -3, x = 6$

5) $\pm 1, 2, 3, 6, 9, 18, 27, 54, \frac{1}{2}, \frac{3}{2}, \frac{9}{2}, \frac{27}{2}$

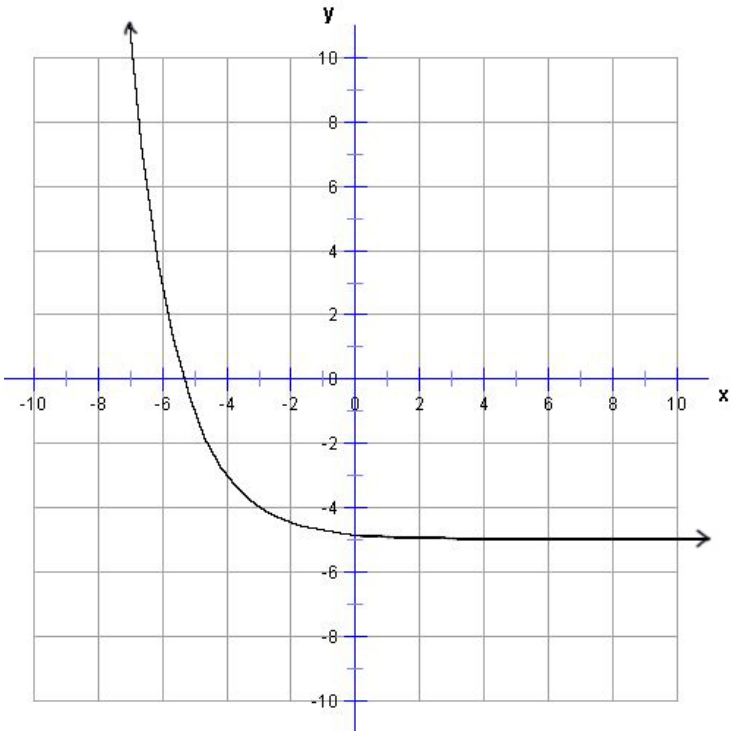
zeros $= \frac{1}{2}, 3, -2, -3i, 3i$ $\quad f(x) = (2x-1)(x-3)(x+2)(x+3i)(x-3i)$



6) $27 \qquad 3 \qquad 32 \qquad -4$

7) $\log_4\left(\frac{m^5 a^9}{x^3}\right)$

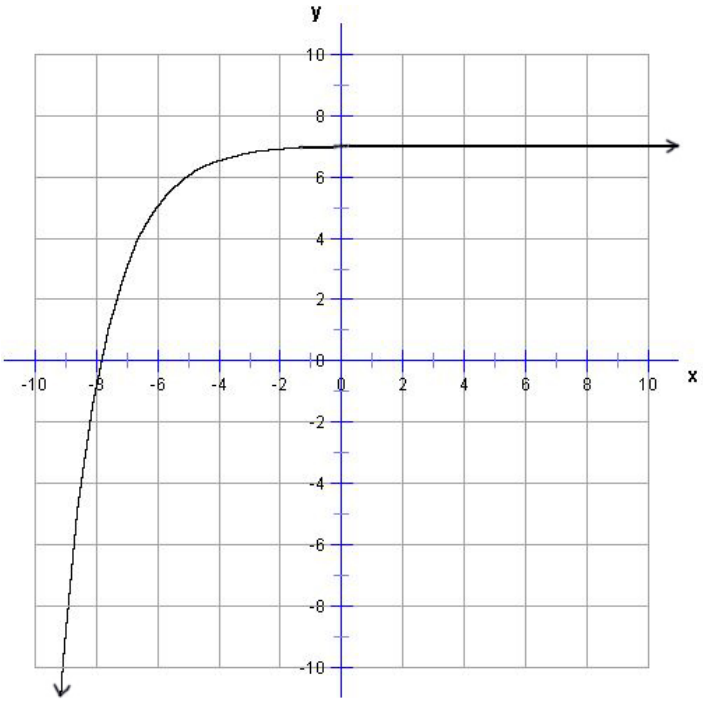
8) Domain: All Real Numbers or $\mathbb{R}$ Range: $y > -5$



9) $x = \dfrac{-12}{17}$ exactly $x = -.706$ approximately

10) $\dfrac{3}{4}\log_7 k + \dfrac{1}{8}\log_7 m - 3\log_7 y$

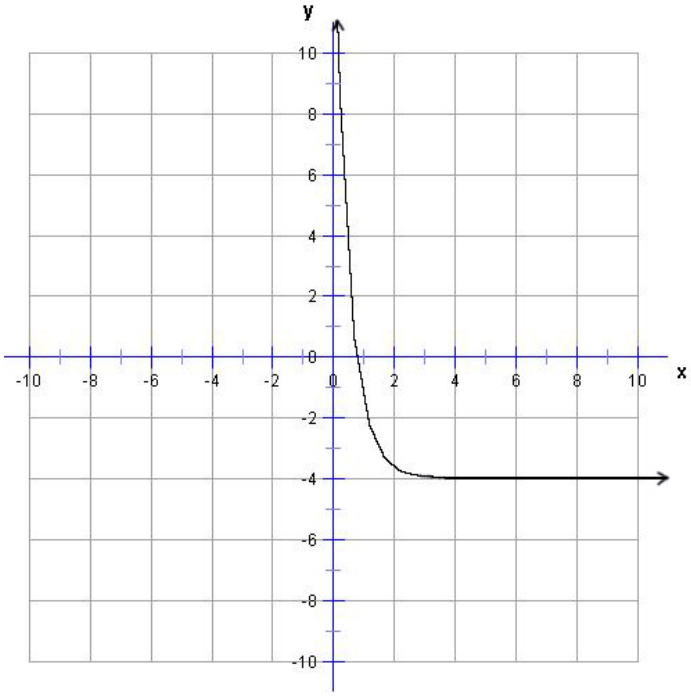
11) Domain: All Real Numbers or $\mathbb{R}$ Range: $y < 7$



12) $x = \dfrac{\log_7 14 + 1}{4}$ exactly $x = .589$ approximately

13) $8x - 7$

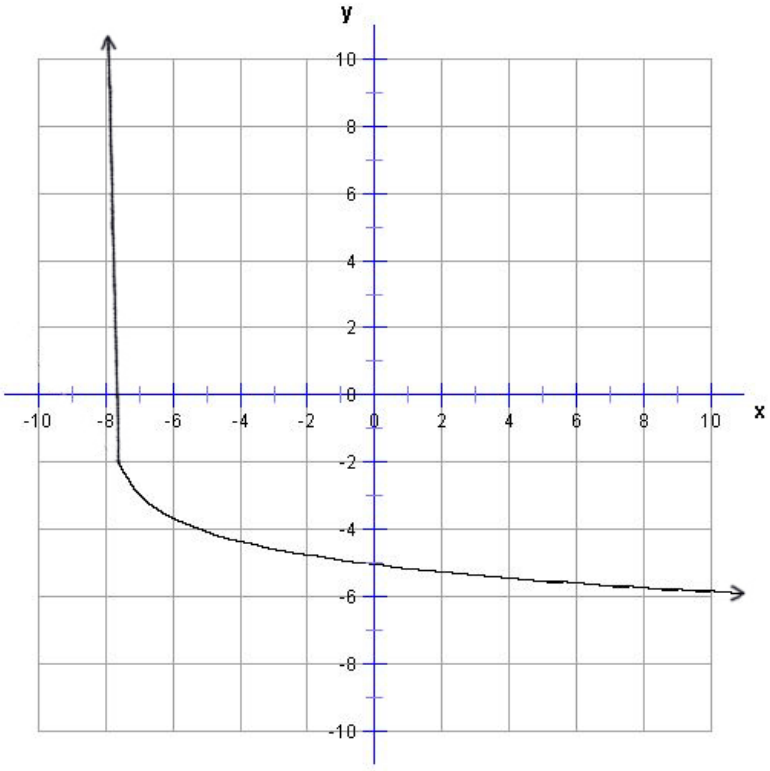
14) Domain: All Real Numbers or $\mathbb{R}$ Range: $y > -4$



15) $x = \dfrac{6}{13}$ exactly $\quad x = .462$ approximately

16) $\log_3\left(\dfrac{\sqrt[7]{y^4}}{a^6 x^8}\right)$

17) Domain: $x > -8$ Range: All Real Numbers or $\mathbb{R}$



18) $x = \dfrac{\log 36 + 5\log 18}{4\log 18 - 6\log 36}$ or $\dfrac{\log 68024448}{\log\left(\dfrac{1}{20736}\right)}$ exactly

$x = -1.814$ approximately

19) $\log_9\left(\dfrac{x^8 y^{28}}{c^{12}}\right)$

20) $6\ln m - 21\ln a - 18\ln x$