

2.85

1.3

1.1 / 3

(1) $x \neq 0$

(2) $0 = \frac{3x+6}{x^2} \rightarrow x = -2 \quad (-2, 0)$

(3) $\lim_{x \rightarrow 0^+} \frac{3x+6}{x^2} = \frac{6}{0} = \infty$ $\lim_{x \rightarrow 0^-} \frac{3x+6}{x^2} = \frac{6}{0} = -\infty \rightarrow \boxed{x < 0}$

$m = \lim_{x \rightarrow \infty} \frac{3x+6}{x^4} = 0$ $n = \lim_{x \rightarrow \infty} \frac{3x+6}{x^2} = 0 \rightarrow \boxed{y = 0}$

(5) $y' = \frac{3x^3 - 3x^2(3x+6)}{x^6} = \frac{-6x^3 - 18x^2}{x^6} = \frac{-6x - 18}{x^3} = -\frac{6(x+3)}{x^3}$

$y' = 0 \rightarrow \boxed{x = -3}$

max $(-3, \frac{1}{9})$

-4	-3	-1	0	1
+	0	-	+	-
	max			

(4) $-3 < x < 0$ iff
 $-3 < x < 0, x > 0$ n3/n1

