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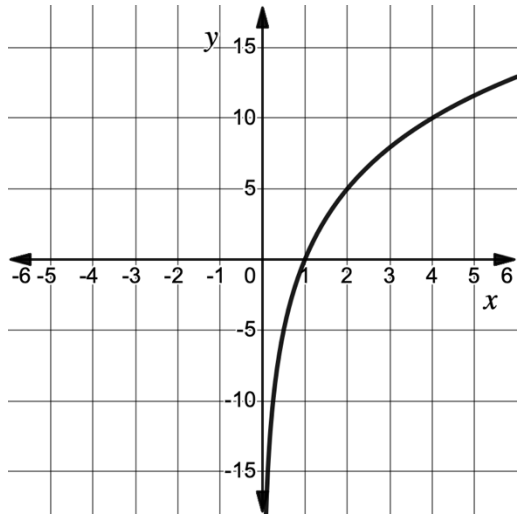
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x
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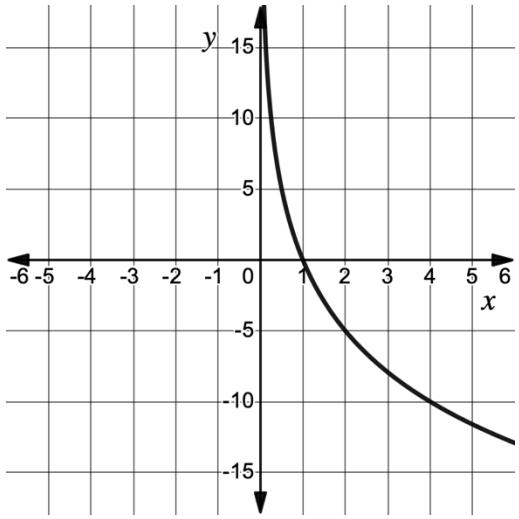
-5
-10
-15
-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6

B.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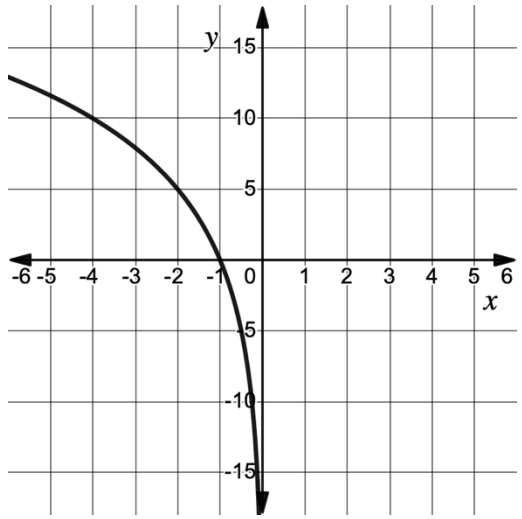
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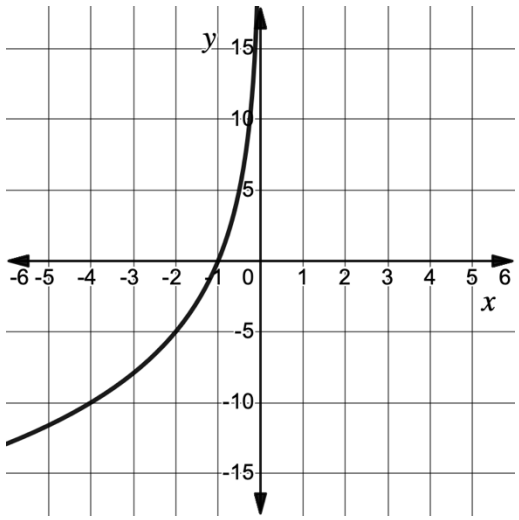
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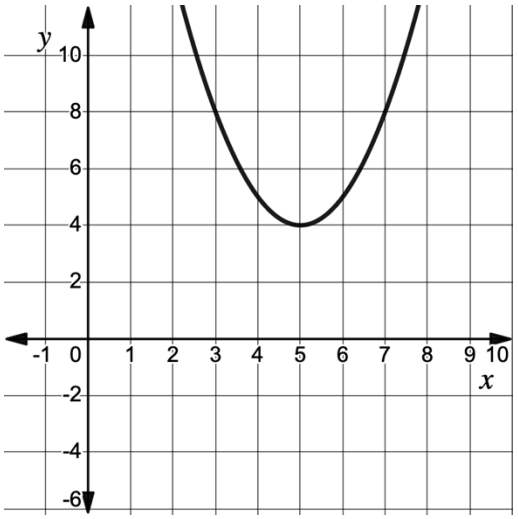
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x
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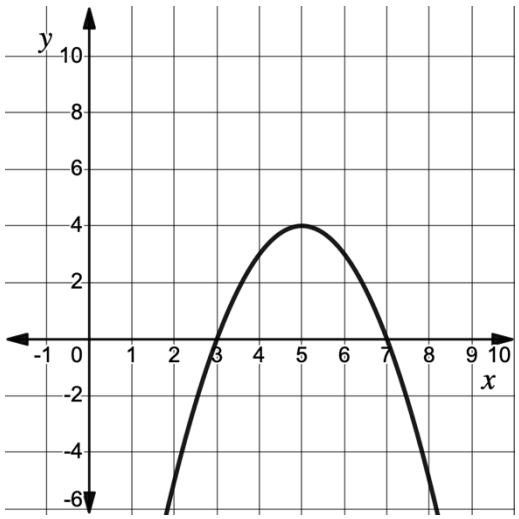
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x
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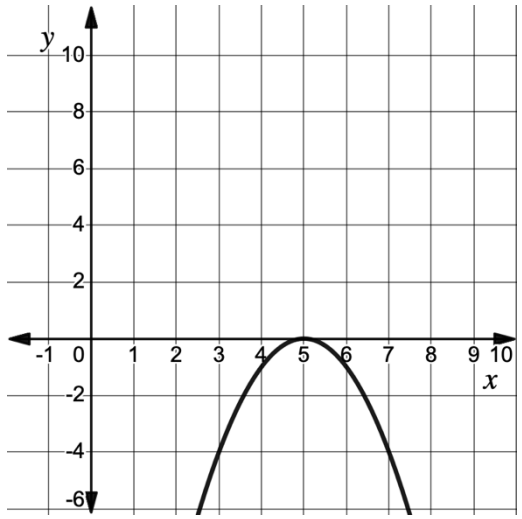
G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x
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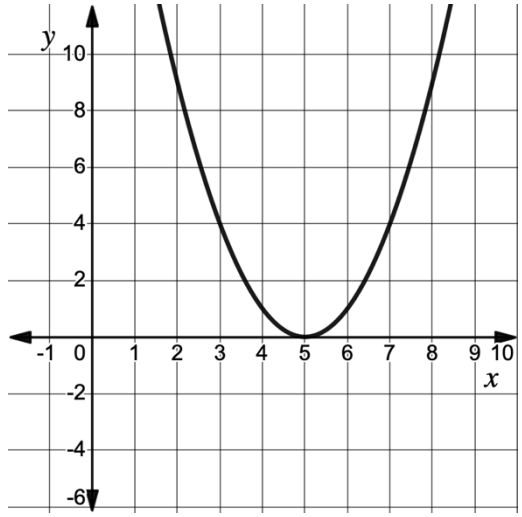
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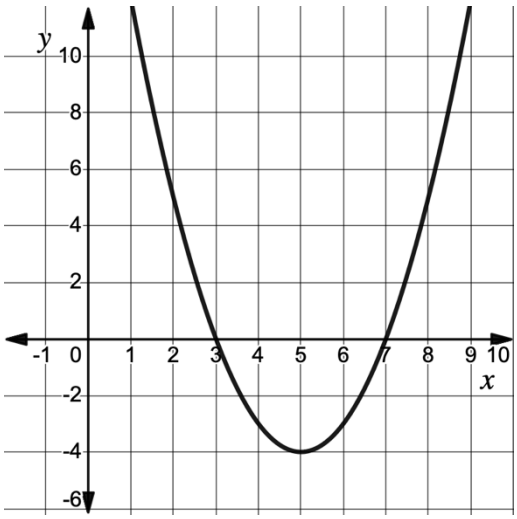
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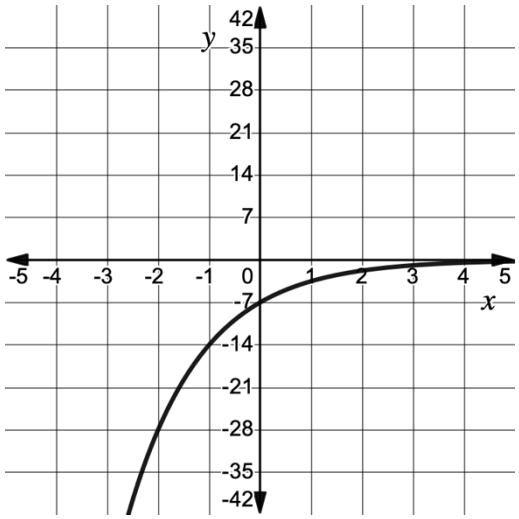
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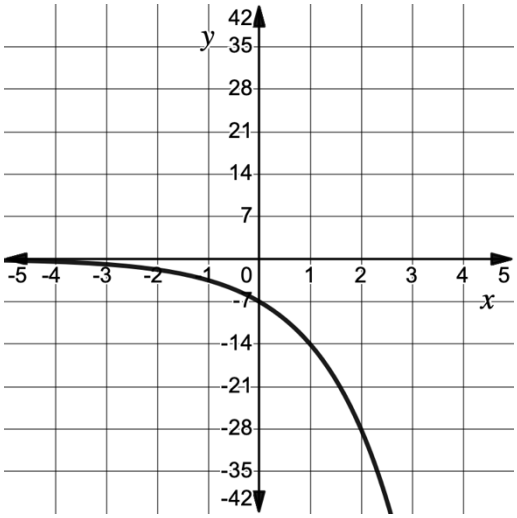
K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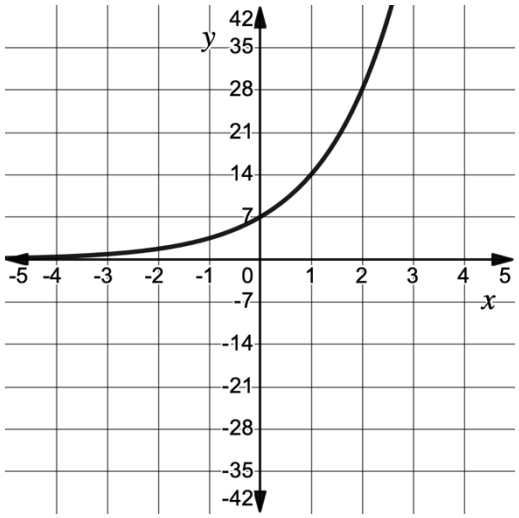
L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x
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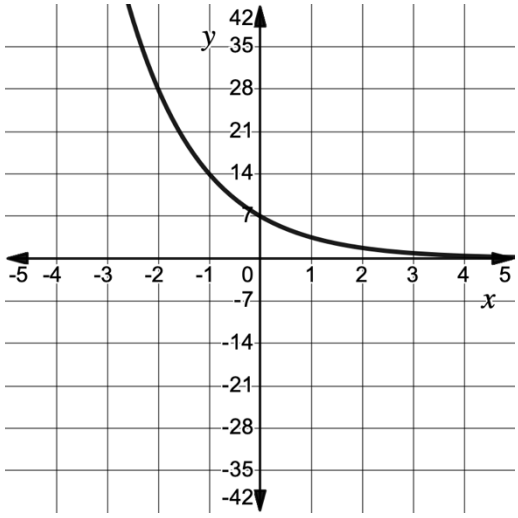
M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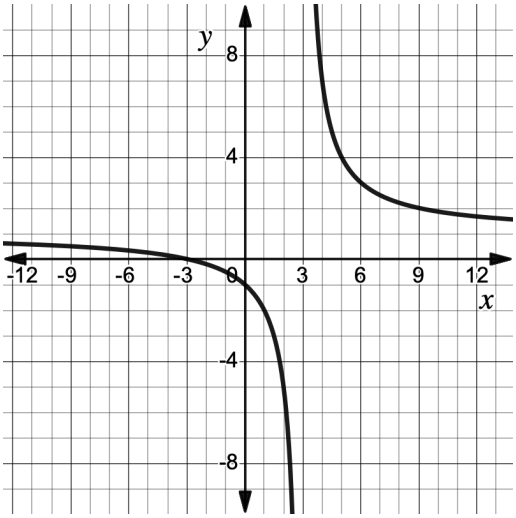
N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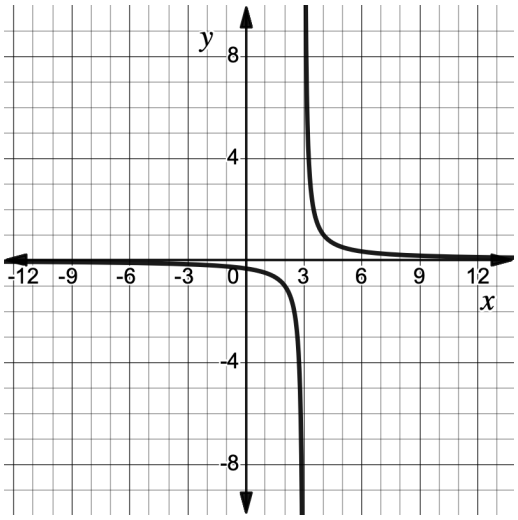
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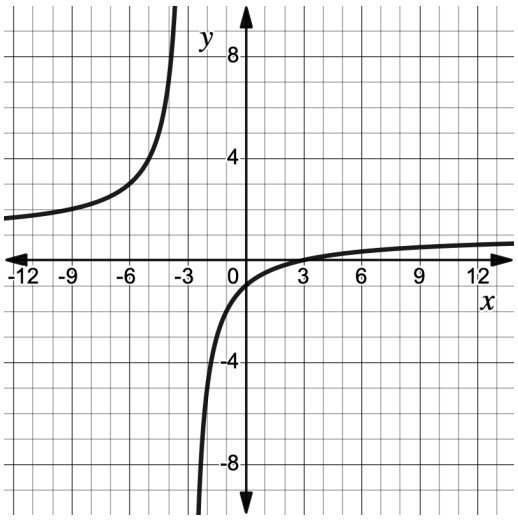
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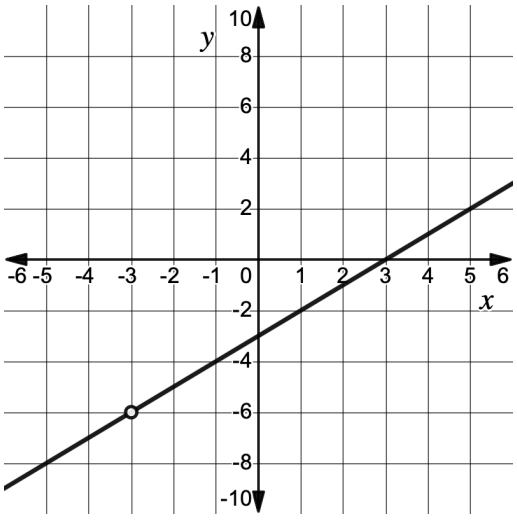
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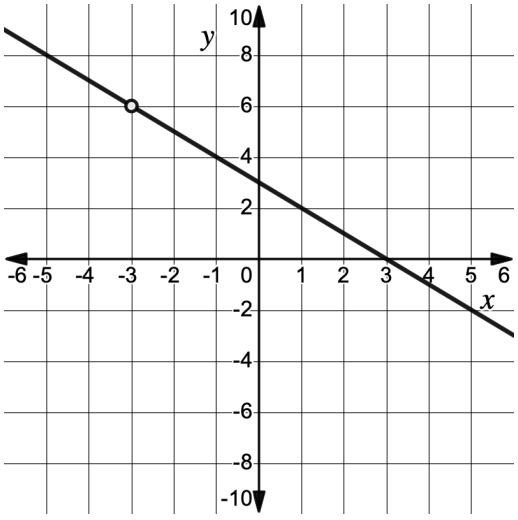
R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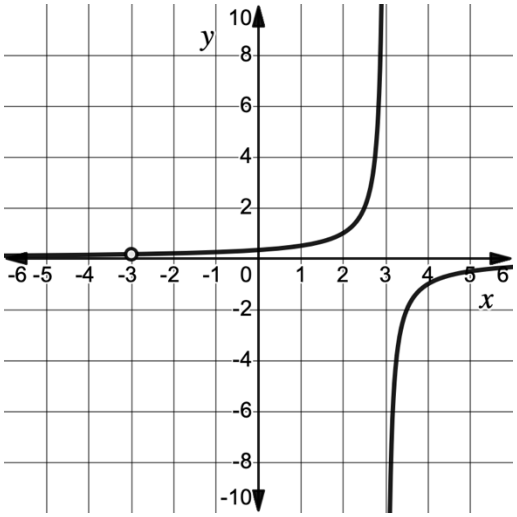
S



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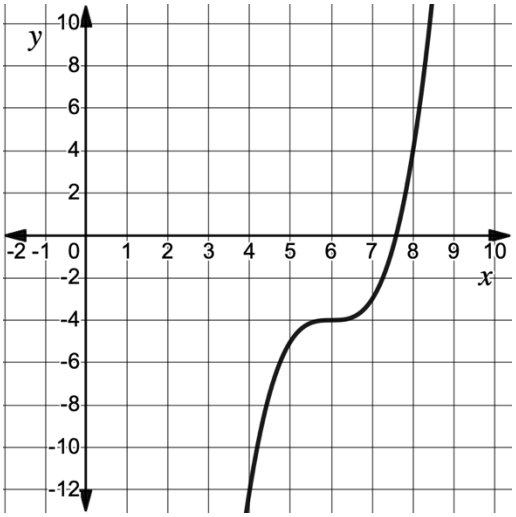

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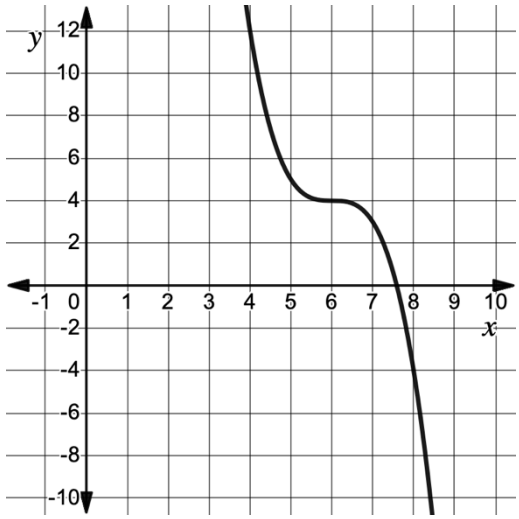

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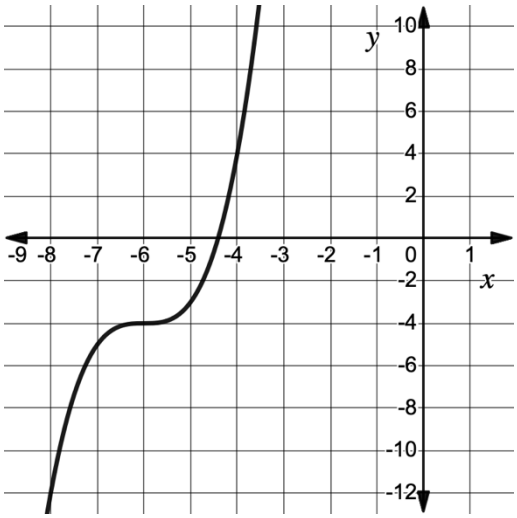

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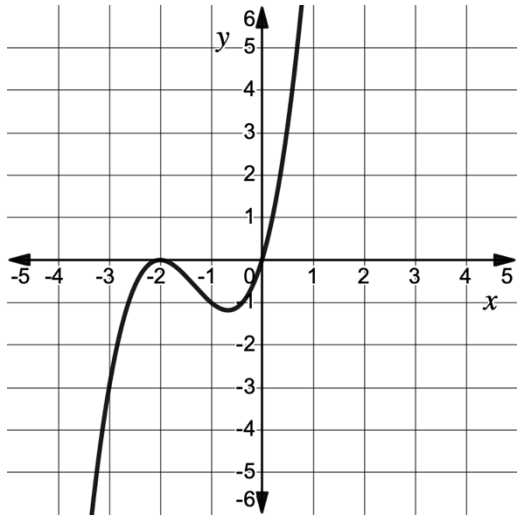

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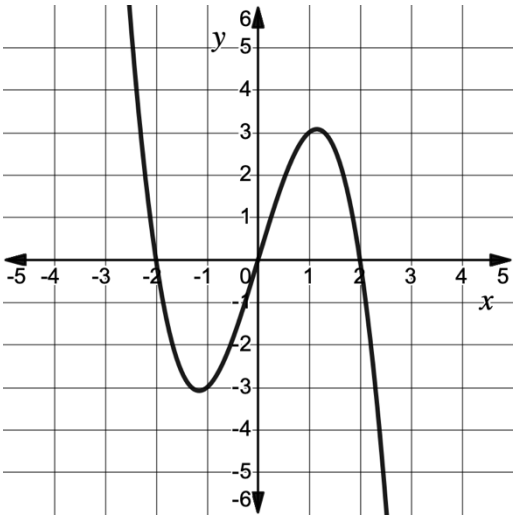

1 $f(x) = \frac{x-3}{x+3}$	2 $f(x) = (x-5)^2 + 4$
3 $f(x) = (x-3)(x-7)$	4 $f(x) = -(x-6)^3 + 4$
5 $f(x) = -7\left(\frac{1}{2}\right)^x$	6 $f(x) = 5\log_2 x$

7 $f(x) = x(x+2)^2$	8 $f(x) = 7 \cdot 2^x$
9 $f(x) = -x^2 + 10x - 25$	10 $f(x) = \dfrac{(x+3)(3-x)}{x+3}$
11 $f(x) = \dfrac{1}{x-3}$	12 $f(x) = 5\log_{0.5}(-x)$

13 $f(x) = (x-6)^3 - 4$	14 $f(x) = x^2 - 10x + 25$
15 $f(x) = x(2-x)(x+2)$	16 $f(x) = \frac{x+3}{x-3}$
17 $f(x) = -7 \cdot 2^x$	18 $f(x) = 5\log_2(-x)$

19 $f(x) = \frac{(x+3)(x-3)}{x+3}$	20 $f(x) = 7\left(\frac{1}{2}\right)^x$
21 $f(x) = -[(x-5)^2 - 4]$	22 $f(x) = (x+6)^3 - 4$
23 $f(x) = 5\log_{0.5} x$	24 $f(x) = -\frac{x+3}{(x+3)(x-3)}$

a As inputs increase additively by 1, outputs double. $f(0) < 0$	b Constant positive change in the average rates of change over consecutive equal-length input intervals and relative minimum of 4
c Constant positive third differences over equal-length input intervals and two distinct zeros	d Vertical asymptote at $x = 3$, horizontal asymptote at $y = 1$, x-intercept of $x = -3$
e Constant positive third differences over equal-length input intervals and inflection point at $x = -6$	f For $x > 0$, as inputs double, outputs increase additively by 5.

g As inputs increase additively by 1, outputs halve. $f(0) < 0$	h As inputs increase additively by 1, outputs double. $f(0) > 0$
i Vertical asymptote at $x = 3$, horizontal asymptote at $y = 0$, hole at $x = -3$	j Vertical asymptote at $x = 3$, horizontal asymptote at $y = 0$
k Constant negative change in the average rates of change over consecutive equal-length input intervals and relative maximum of 4	l Constant negative third differences over equal-length input intervals and three distinct zeros

m For $x > 0$, as inputs double, outputs decrease additively by 5.	n Constant positive change in the average rate of change over consecutive equal-length input intervals and relative minimum of -4
o Constant negative third differences over equal-length input intervals and inflection point at $x = 6$	p Constant negative change in the average rates of change over consecutive equal-length input intervals and relative maximum of 0
q Vertical asymptote at $x = -3$, horizontal asymptote at $y = 1$, x-intercept of $x = 3$	r For $x < 0$, as inputs halve, outputs decrease additively by 5.

s Constant positive change in the average rates of change over consecutive equal-length input intervals and relative minimum of 0	t Constant positive third differences over equal-length input intervals and inflection point at $x = 6$
u Hole at $(-3, -6)$, x-intercept of $x = 3$	v For $x < 0$, as inputs halve, outputs increase additively by 5.
w As inputs increase additively by 1, outputs halve. $f(0) > 0$	x Hole at $(-3,6)$, x-intercept of $x = 3$

* $\lim_{x\to-\infty} f(x) = -\infty$ $\lim_{x\to\infty} f(x) = 0$	~ $\lim_{x\to\infty} f(x) = \infty$ $\lim_{x\to-\infty} f(x) = -\infty$
# $\lim_{x\to3^-} f(x) = -\infty$ $\lim_{x\to3^+} f(x) = \infty$ $\lim_{x\to-\infty} f(x) = 1$ $\lim_{x\to\infty} f(x) = 1$	$ $\lim_{x\to0^+} f(x) = \infty$ $\lim_{x\to\infty} f(x) = -\infty$
@ $\lim_{x\to\infty} f(x) = -\infty$ $\lim_{x\to-\infty} f(x) = \infty$	^ $\lim_{x\to\infty} f(x) = -\infty$ $\lim_{x\to-\infty} f(x) = -\infty$

= $\lim_{x\to\infty} f(x) = \infty$ $\lim_{x\to-\infty} f(x) = \infty$	! $\lim_{x\to-\infty} f(x) = 0$ $\lim_{x\to\infty} f(x) = -\infty$
& $\lim_{x\to-3^-} f(x) = -6$ $\lim_{x\to-3^+} f(x) = -6$ $\lim_{x\to-\infty} f(x) = -\infty$ $\lim_{x\to\infty} f(x) = \infty$	+ $\lim_{x\to0^+} f(x) = -\infty$ $\lim_{x\to\infty} f(x) = \infty$
% $\lim_{x\to-3^-} f(x) = \frac{1}{6}$ $\lim_{x\to-3^+} f(x) = \frac{1}{6}$ $\lim_{x\to3^-} f(x) = \infty$ $\lim_{x\to3^+} f(x) = -\infty$	? $\lim_{x\to\infty} f(x) = \infty$ $\lim_{x\to-\infty} f(x) = -\infty$

∑ $\lim_{x\to\infty} f(x) = \infty$ $\lim_{x\to-\infty} f(x) = -\infty$	® $\lim_{x\to3^-} f(x) = -\infty$ $\lim_{x\to3^+} f(x) = \infty$ $\lim_{x\to-\infty} f(x) = 0$ $\lim_{x\to\infty} f(x) = 0$
¥ $\lim_{x\to-3^-} f(x) = 6$ $\lim_{x\to-3^+} f(x) = 6$ $\lim_{x\to-\infty} f(x) = \infty$ $\lim_{x\to\infty} f(x) = -\infty$	π $\lim_{x\to\infty} f(x) = \infty$ $\lim_{x\to-\infty} f(x) = \infty$
ß $\lim_{x\to0^-} f(x) = -\infty$ $\lim_{x\to-\infty} f(x) = \infty$	© $\lim_{x\to-\infty} f(x) = 0$ $\lim_{x\to\infty} f(x) = \infty$

Δ $\lim_{x\to\infty} f(x) = -\infty$ $\lim_{x\to-\infty} f(x) = -\infty$	Ω $\lim_{x\to\infty} f(x) = -\infty$ $\lim_{x\to-\infty} f(x) = \infty$
≈ $\lim_{x\to-\infty} f(x) = \infty$ $\lim_{x\to\infty} f(x) = 0$	∫ $\lim_{x\to0^-} f(x) = \infty$ $\lim_{x\to-\infty} f(x) = -\infty$
¢ $\lim_{x\to\infty} f(x) = \infty$ $\lim_{x\to-\infty} f(x) = \infty$	≠ $\lim_{x\to-3^-} f(x) = \infty$ $\lim_{x\to-3^+} f(x) = -\infty$ $\lim_{x\to-\infty} f(x) = 1$ $\lim_{x\to\infty} f(x) = 1$