

$(x-1)$

$(x-2)$

$(x-3)$

$(x-4)$

$(x+1)$

$(x+2)$

$(x+3)$

$(x+4)$

$-(x-1)$

$-(x-2)$

$-(x-3)$

$-(x-4)$

$-(x+1)$

$-(x+2)$

$-(x+3)$

$-(x+4)$

$(x-1)$

$(x-2)$

$(x-3)$

$(x-4)$

$(x+1)$

$(x+2)$

$(x+3)$

$(x+4)$

$-(x-1)$

$-(x-2)$

$-(x-3)$

$-(x-4)$

$-(x+1)$

$-(x+2)$

$-(x+3)$

$-(x+4)$

$(x-1)$ $(x-2)$ $(x-3)$ $(x-4)$ $(x+1)$ $(x+2)$ $(x+3)$ $(x+4)$ $-(x-1)$ $-(x-2)$ $-(x-3)$ $-(x-4)$ $-(x+1)$ $-(x+2)$ $-(x+3)$ $-(x+4)$

**most vertical asymptotes
to the right of the y-axis
4 pts**

**most vertical asymptotes
to the left of the y-axis
4 pts**

**most vertical asymptotes
2 pts**

**most holes
4 pts**

**hole on the x-axis
4 pts**

**highest hole
5 pts**

**lowest hole
5 pts**

**up/up end behavior
3 pts**

down/up end behavior
3 pts

down/down end behavior
3 pts

up/down end behavior
3 pts

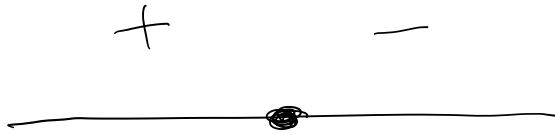
horiz. asymptote at $y=0$
3 pts

horiz. asymptote at $y=1$
3 pts

horiz. asymptote at $y=-1$
3 pts

**most x-intercepts to the
right of the y-axis**
3 pts

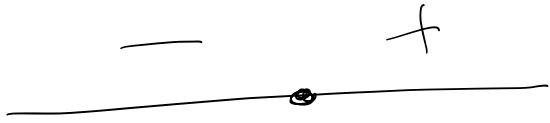
**most x-intercepts to the
left of the y-axis**
3 pts



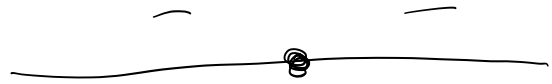
2 pts



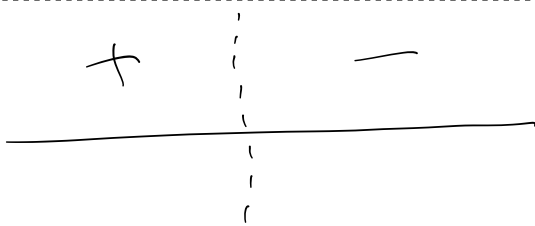
4 pts



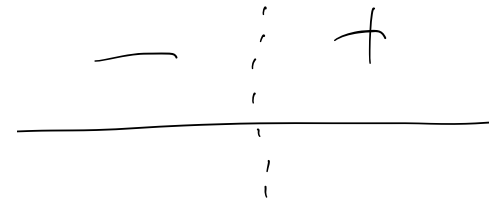
2 pts



4 pts



2 pts



2 pts



4 pts



4 pts

symmetrical over y-axis
5 pts

any hole
2 pts each

any vertical asymptote
1 pt each

any x-intercept
1 pt each

slant/oblique asymptote
4 pts

two consecutive vertical asymptotes (no roots/holes between)
3 pts

horiz. asymptote at $y=1$
4 pts

horiz. asymptote at $y=-1$
4 pts