

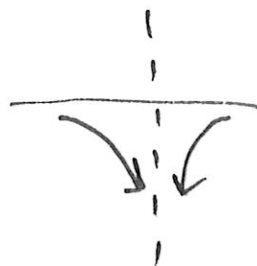
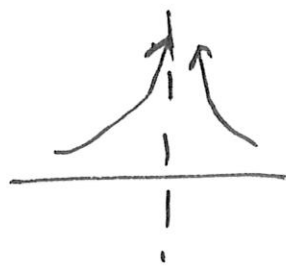
3.5

$$f(x) = \frac{k}{(x-a)^n}$$

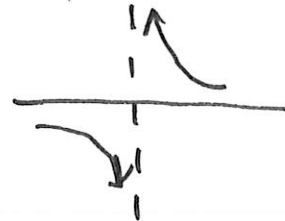
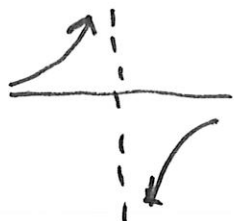
Day 4

①

If  $n$  is even:  
like  $\frac{1}{x^2}$



If  $n$  is odd:  
like  $\frac{1}{x}$



Going from graph to function.

X-intercepts (zeros - where graph crosses X-axis)

ex:  $(-1, 0)$   $(2, 0)$  Numerator  $(x+1)(x-2)$

Vertical asymptote (invisible vertical line that graph approaches but does not cross.)

ex:  $x = -4$  Denominator  $(x+4)$

horizontal asymptote ex:  $y = 3$

If H.A. is not zero, the degree of the num. and denom. are the same.

When  $y = 3$  the ratio of the leading coefficients is 3.

$$f(x) = \frac{3(x+1)(x-2)}{(x+4)^2} \leftarrow \text{since degrees same}$$