

## Sketch the Curve of a Function

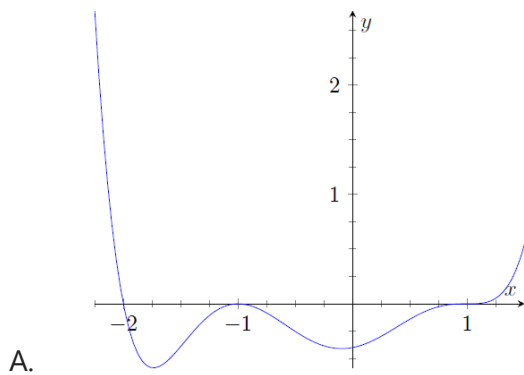
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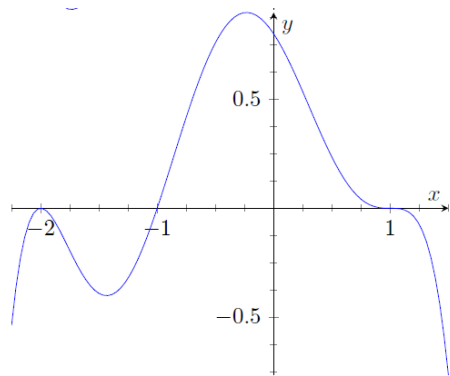
### Learning Objectives

- Sketch the graph of a polynomial
  - Sketch the graph of a rational function
  - Sketch the graph of a function with a cusp
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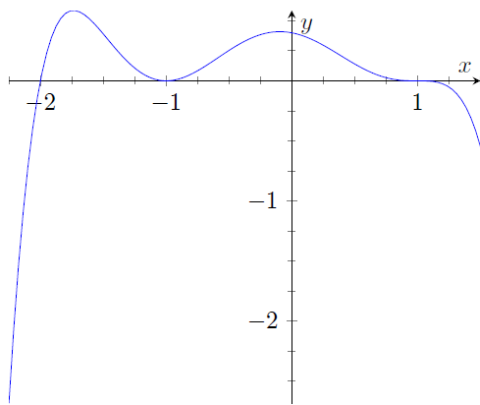
Sketch the graph of a polynomial

1. Identify the graph of the polynomial  $f(x) = -\frac{1}{5}(x + 2)(x + 1)^2(x - 1)^3$ .

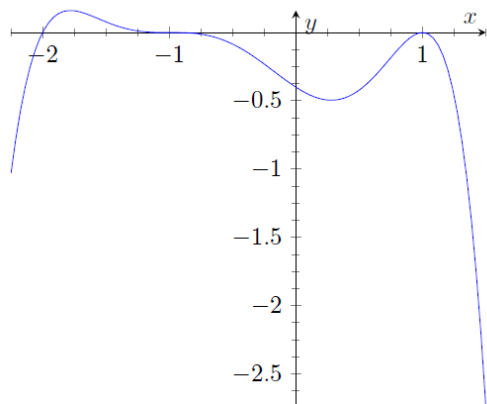




B.



C.

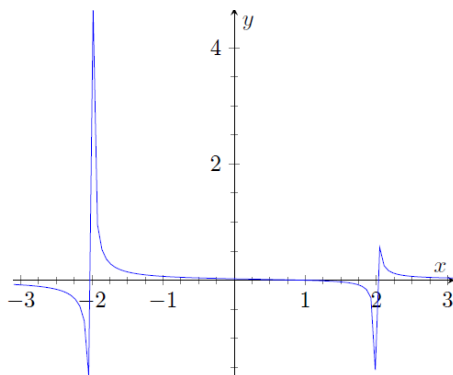


D.

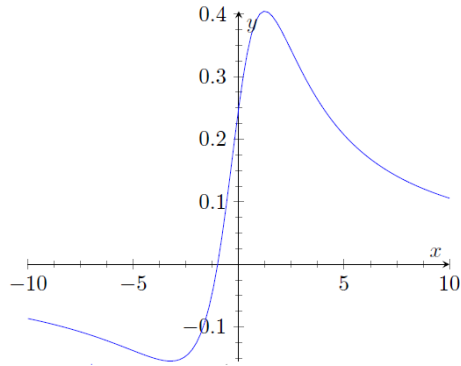
2. Sketch the graph of  $g(x) = \frac{1}{18}x^3(x+3)^2(x-3)$ .

*Sketch the graph of a rational function*

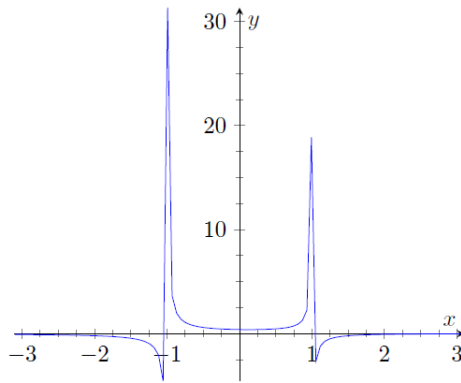
3. Identify the graph of the function  $f(x) = \frac{x-1}{x^2+4}$ .



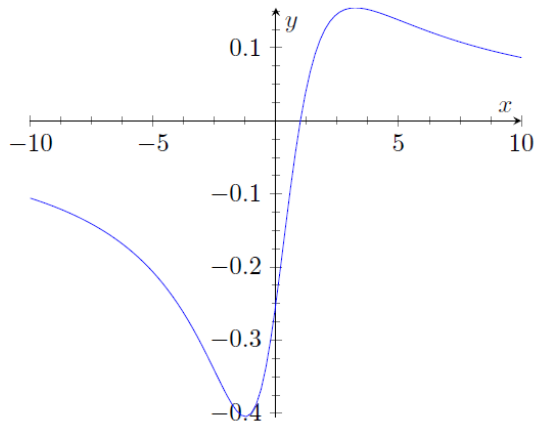
A.



B.



C.

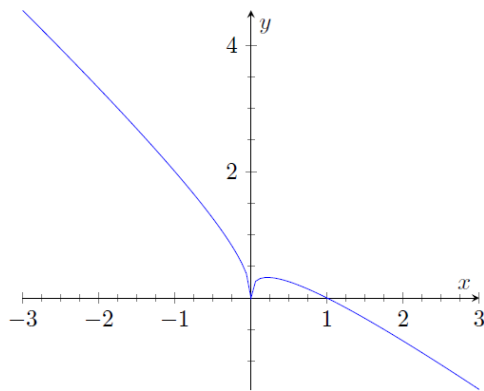


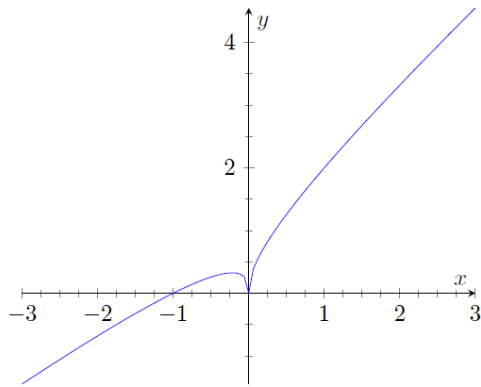
D.

4. Sketch the graph of  $g(x) = \frac{x}{x^2-1}$ .

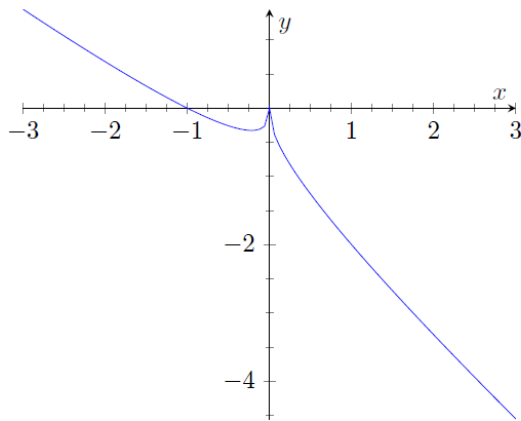
Sketch the graph of a function with a cusp

5. Which of the following graph represents the function  $h(x) = x^{2/5} - x$ .

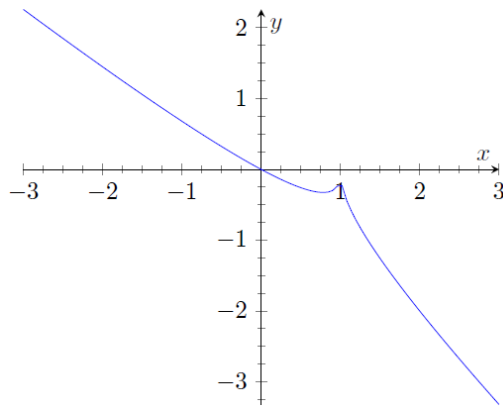




B.



C.



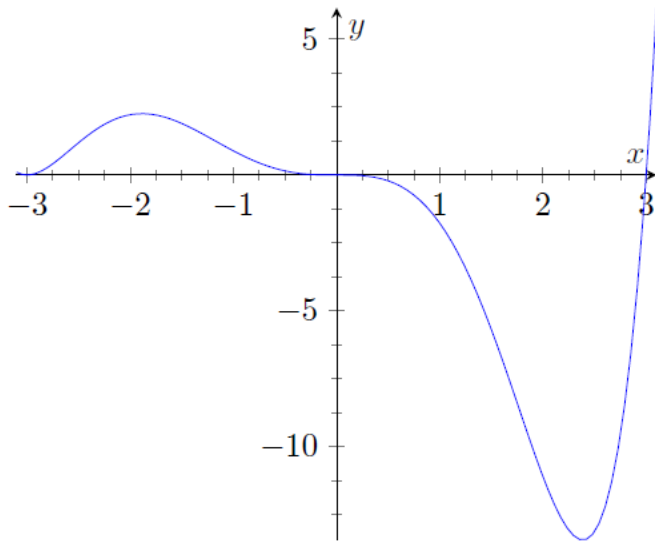
D.

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6. Sketch the graph of the function  $f(x) = \frac{1}{8} \left[ (2x + 1)^{\frac{2}{5}} - (2x + 1) \right] (x + 2)$ . [Hint: factor!]

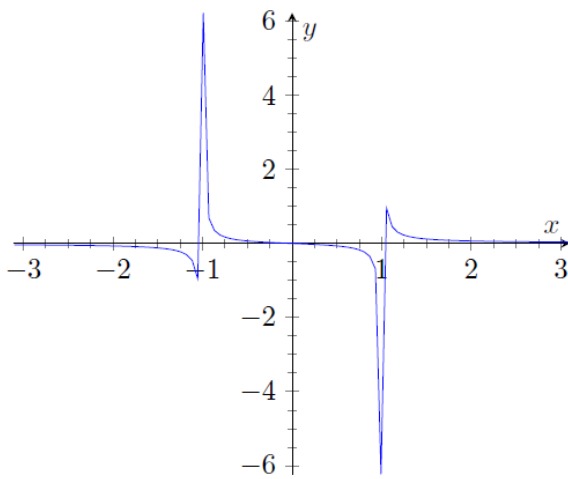
ANSWER KEY

1. C



2.

3. D

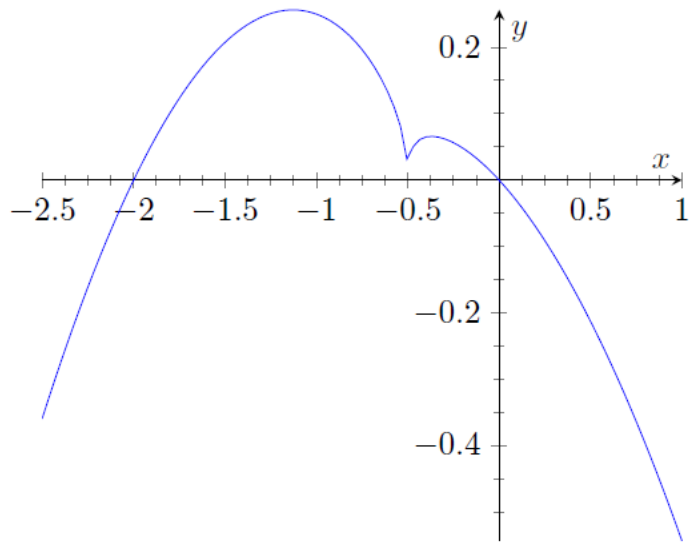


4.

5. A.

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6.