



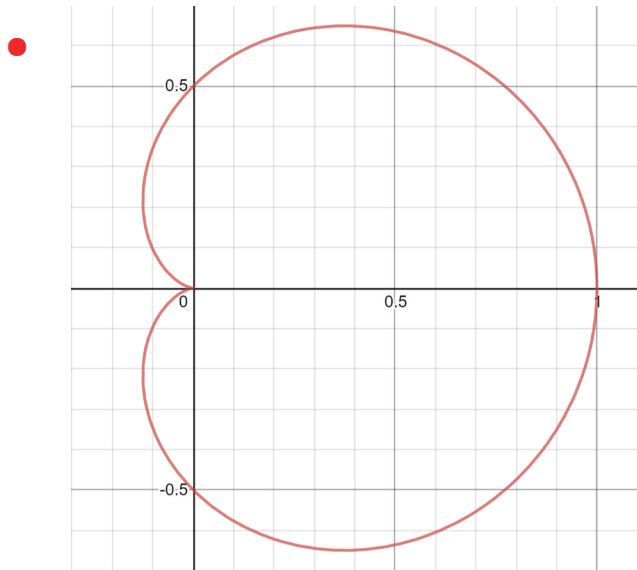
MTH 30: Final Exam Review

Part 2

Is the given relation a function?

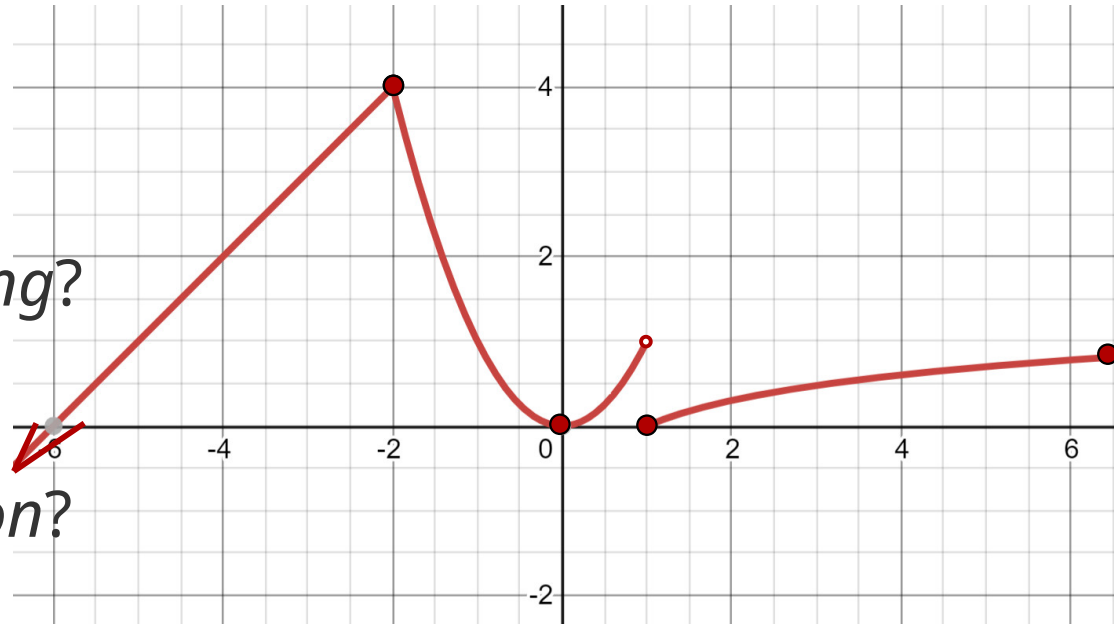
- $\{ (1,7), (2,3), (4,2), (1,4), (7,1) \}$

- $x^3 - y^3 = 10$

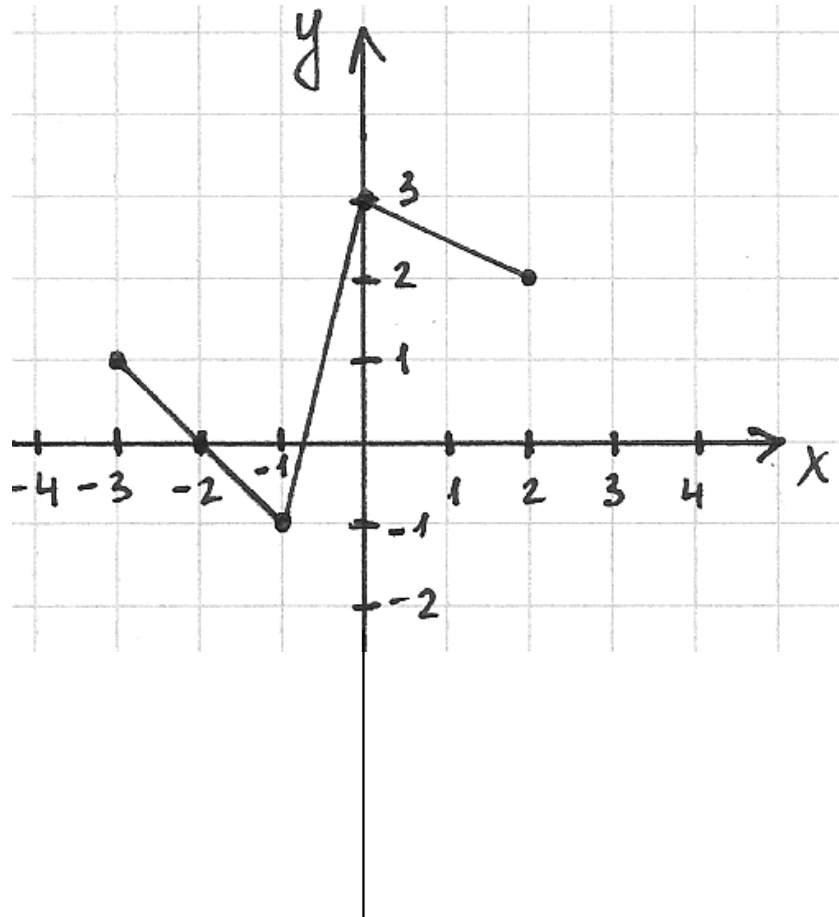


Use the graph to answer the questions

- What is the *domain* of f ?
- What is the *range* of f ?
- On which interval f is *increasing*?
- Is f *even, odd, or neither*?
- Does f have an *inverse function*?
- Find $f(1) + f(-2)$
- Does f has an *absolute maximum*?
- Does f has a *relative/local minimum*?




Given the graph of a function g , graph $-g(2x) - 3$



Given $f(x) = \sqrt{x-2}$ **and** $g(x) = \frac{1}{x}$, **find**

- $(f \circ g)(x)$
- the *domain* of $(f \circ g)(x)$
- $(f g)(x)$
- the domain of $(f g)(x)$



Given $f(x) = \frac{x+2}{x-5}$, **find its inverse**




State the end behavior of the polynomial function

$$f(x) = -x^6 + 5x^4 - 12x$$



**For the polynomial function $f(x) = -3x^6 + 5x^4 - 12$,
list all the possible rational zeros.**



Given $f(x) = 2x^3 - 7x^2 + 9x - 3$, find the remainder from the division by $x + 11$

- Hint: use the *Remainder Theorem*

For the rational function $f(x) = \frac{x^2 + 4x + 3}{(x+2)^2}$ **find**

- Its *vertical asymptotes*, if any
- Its *horizontal asymptote*, if any
- *x-intercepts*, if they exist
- *y-intercept*, if it exists



Find the domain of the rational function

$$f(x) = \frac{x+1}{x^2+2x-3}$$