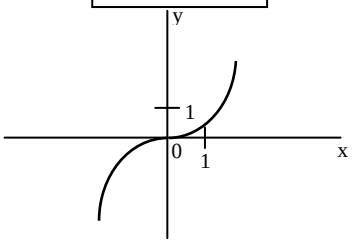
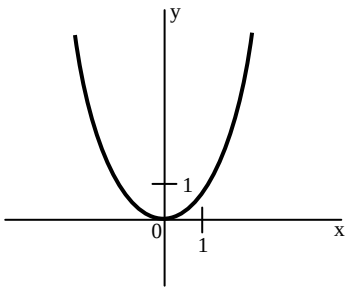
Worksheet 8 – POWER FUNCTION WITH POSITIVE NATURAL EXPONENT $y = x^n; n \in N$

n-odd



- Domain = R
- Range = R
- Increasing
- One to one function
- Odd
- Not bounded below, neither above
- No minimum, No maximum

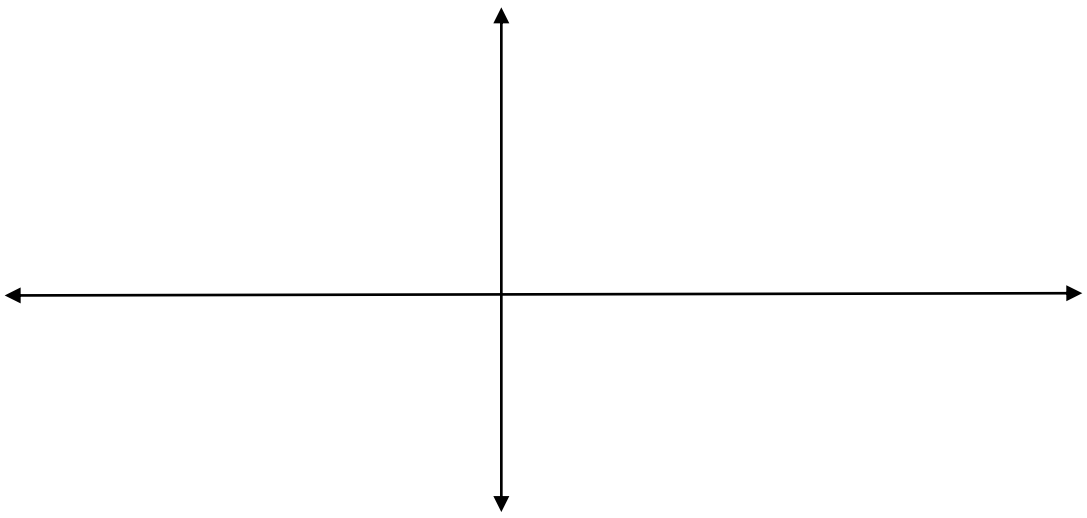
n - even



- Domain = R
  Range = $\langle 0, \infty)$
- Decreasing $(-\infty, 0\rangle$
  Increasing $\langle 0, \infty)$
- Bounded below, not bounded above
- Even
- In point $x = 0$ there is local minimum, there is no maximum

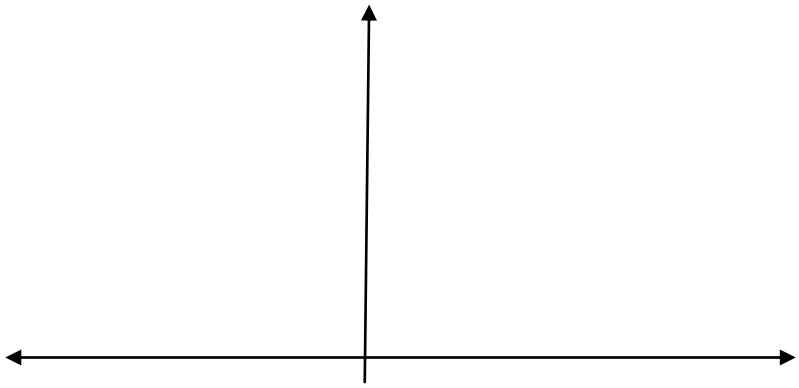
E1 Compare graphs of functions $y = x^1$, $y = x^3$, $y = x^5$.

x	- 1.5	-1	- 0.5	0	0.5	1
$y = x^1$						
$y = x^3$						
$y = x^5$						



Exercise 2 Compare graphs of functions $y = x^2$, $y = x^4$, $y = x^6$.

x	- 1.5	-1	- 0.5	0	0.5	1
$y = x^2$						
$y = x^4$						
$y = x^6$						



Exercises:

Draw graphs of these functions: a) $y = x^3 - 1$, b) $y = (x - 1)^5$, c) $y = x^4 - 3$