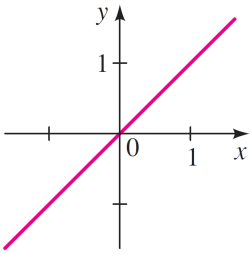
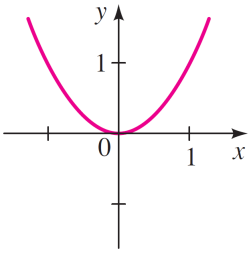
DEFINITION: A polynomial that consists of just a single term is called a **monomial**.

EXAMPLES: The polynomials $P(x) = x^3$ and $Q(x) = -6x^5$ are monomials.

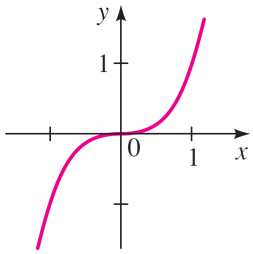
EXAMPLES: The simplest polynomial functions are the monomials $P(x) = x^n$, whose graphs are shown in the Figures below.



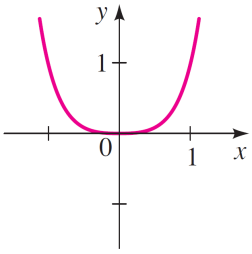
(a) $y = x$



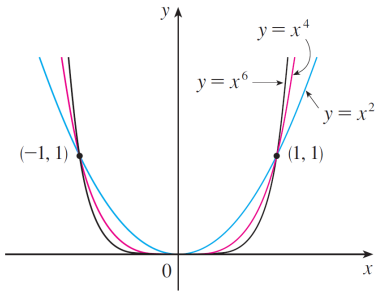
(b) $y = x^2$

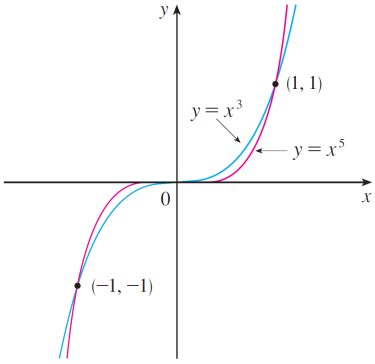


(c) $y = x^3$



(d) $y = x^4$





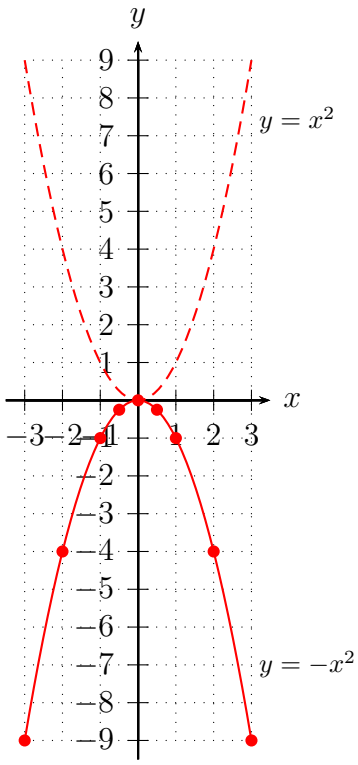
EXAMPLE: Sketch the graphs of the following functions.

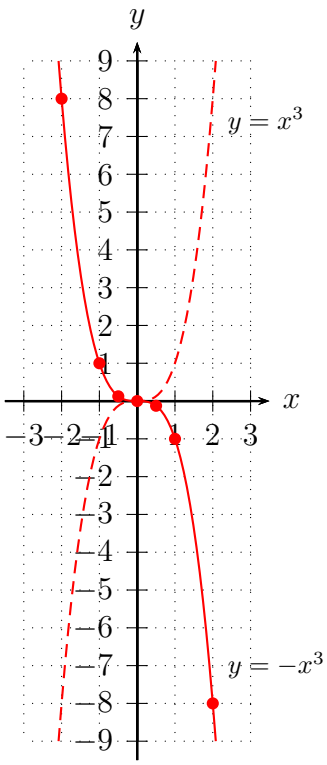
(a) $y = -x^2$ (b) $y = -x^3$ (c) $y = -2x^2$

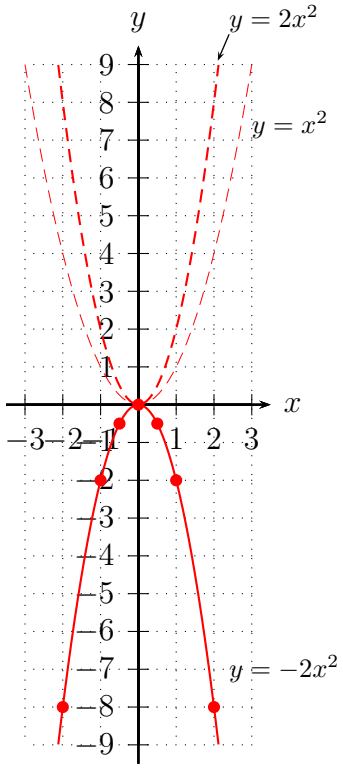
EXAMPLE: Sketch the graphs of the following functions.

(a) $y = -x^2$ (b) $y = -x^3$ (c) $y = -2x^2$

Solution:







x	$y = -x^2$
0	0
1/2	−1/4
−1/2	−1/4
1	−1
−1	−1
2	−4
−2	−4
3	−9
−3	−9

x	$y = -x^3$
0	0
1/2	−1/8
−1/2	1/8
1	−1
−1	1
2	−8
−2	8
3	−27
−3	27

x	$y = -2x^2$
0	0
1/2	−1/2
−1/2	−1/2
1	−2
−1	−2
2	−8
−2	−8
3	−18
−3	−18