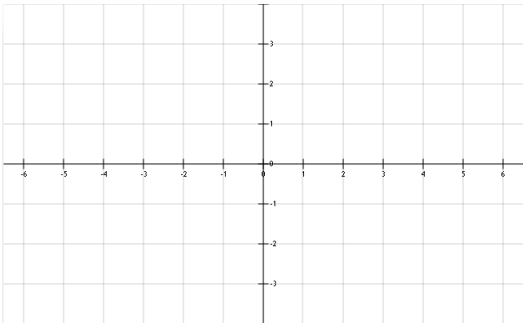
Grenzwerte, Symmetrien, Nullstellen von Funkt. & Zeichnen von Funktionsgraphen II

Tragen Sie zwei Möglichkeiten für die fehlenden Funktionsgraphen ein oder geben Sie eine mögliche Funktionsgleichung an!

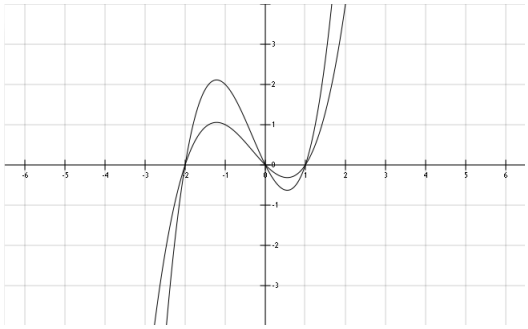
(1.)



$f(x) = x(x+2)^2$

=

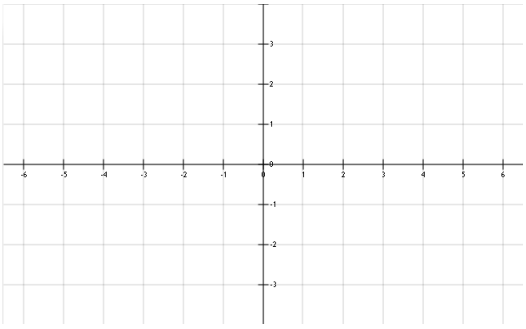
(2.)



$f(x) =$

=

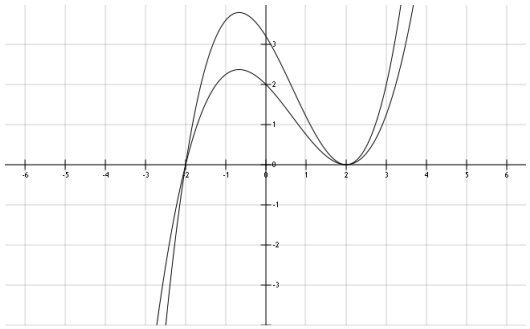
(3.)



$f(x) = 0{,}1(x^2-1)(x^2-9)$

=

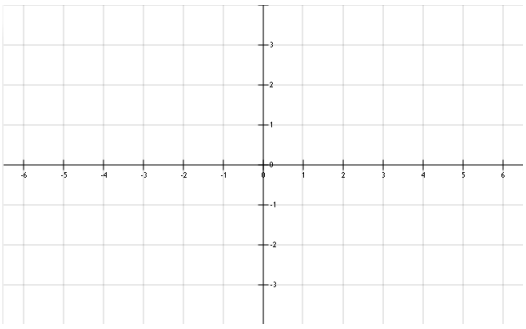
(4.)



$f(x) =$

=

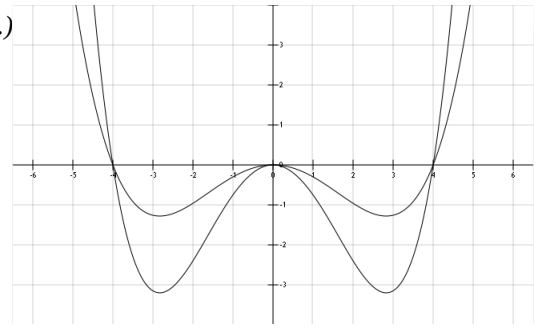
(5.)



$f(x) = (x-1)^3$

=

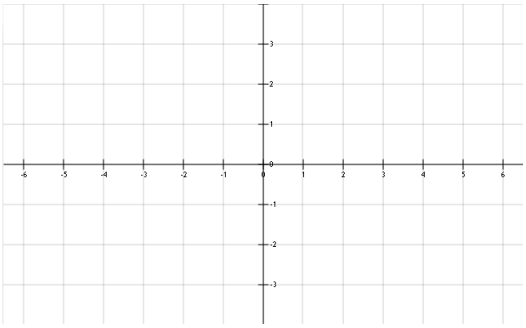
(6.)



$f(x) =$

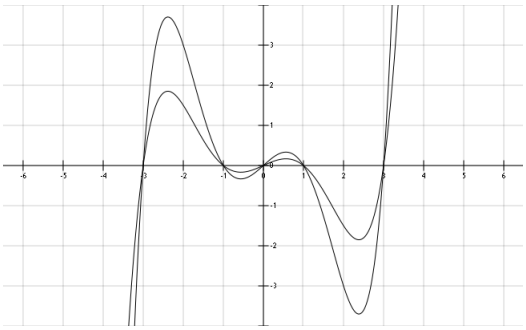
=

(7.)



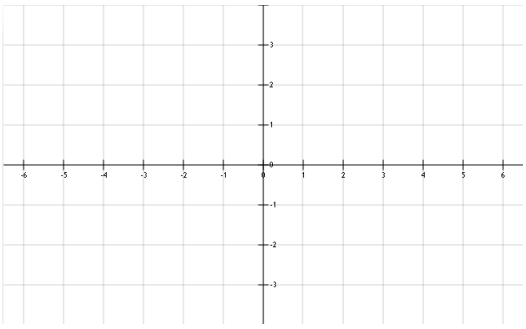
$f(x) = -x(x-3)^2$

(8.)



$f(x) =$

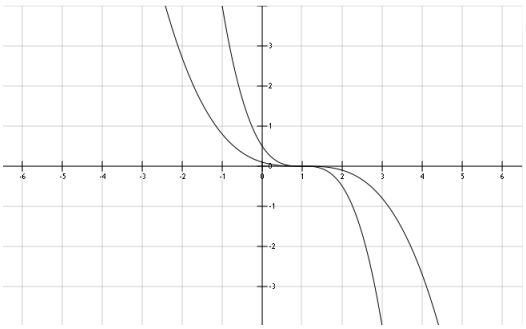
(9.)



$f(x) = (x-1)^2\,(x+2)^2$

$=$

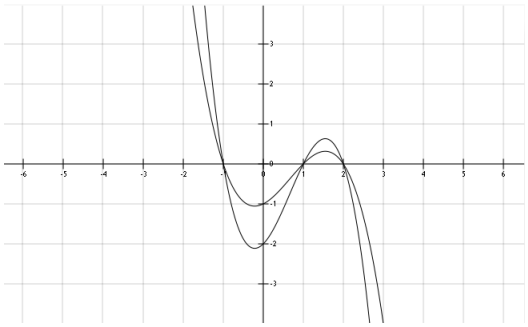
(10.)



$f(x) =$

$=$

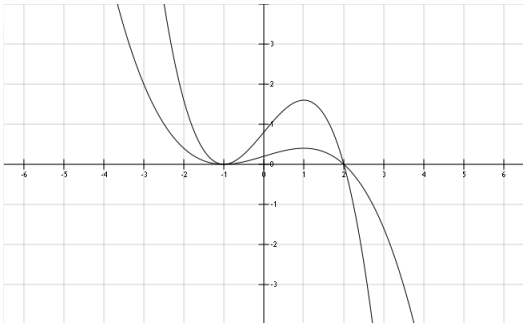
(11.)



$f(x) = -(x^2-1)(x-2)$

$=$

(12.)



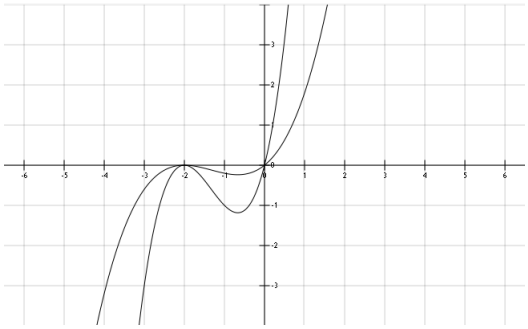
$f(x) =$

$=$

Grenzwerte, Symmetrien, Nullstellen von Funkt. & Zeichnen von Funktionsgraphen II – Lösungen

Tragen Sie zwei Möglichkeiten für die fehlenden Funktionsgraphen ein oder geben Sie ein mögliche Funktionsgleichung an!

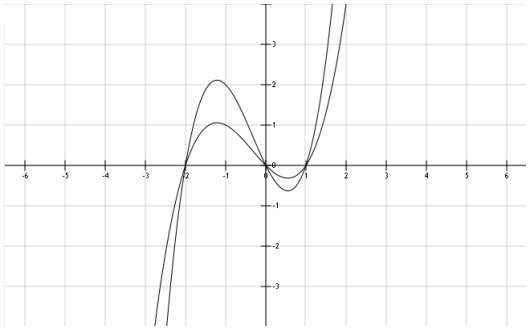
(1.)



$f(x) = x(x+2)^2$

$= x^3+4x^2+4x$

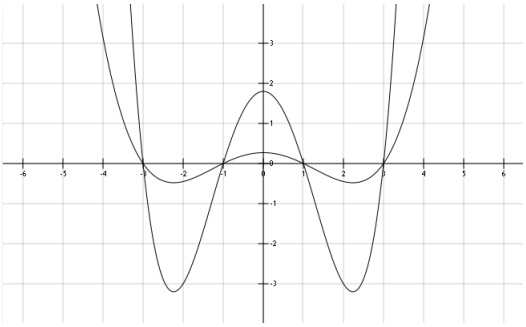
(2.)



$f(x) = x(x+2)(x-1)$

$= x^3+x^2-2x$

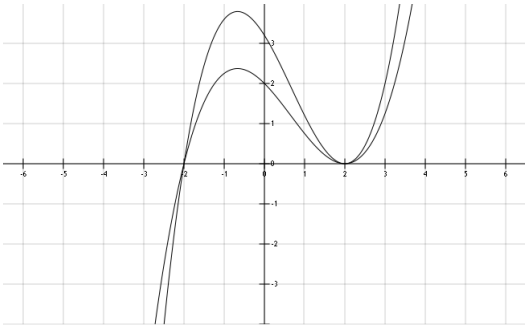
(3.)



$f(x) = 0{,}1(x^2-1)(x^2-9)$

$= 0{,}1x^4-0{,}1x^2+0{,}9$

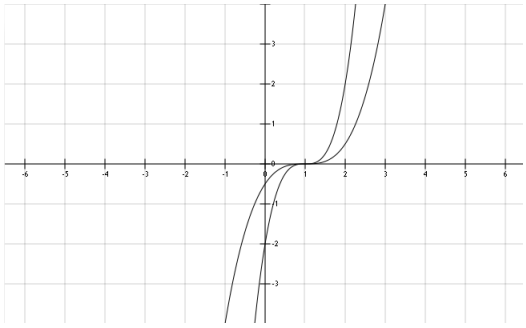
(4.)



$f(x) = (x+2)(x-2)^2$

$= x^3-2x^2-4x+8$

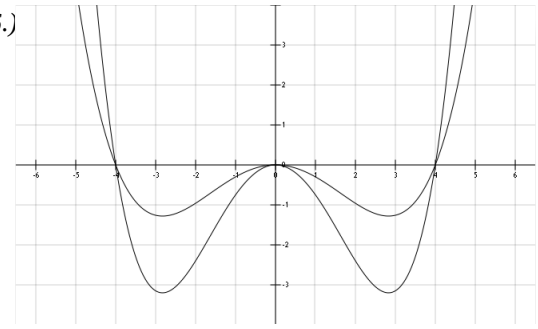
(5.)



$f(x) = (x-1)^3$

$= x^3-3x^2+3x-1$

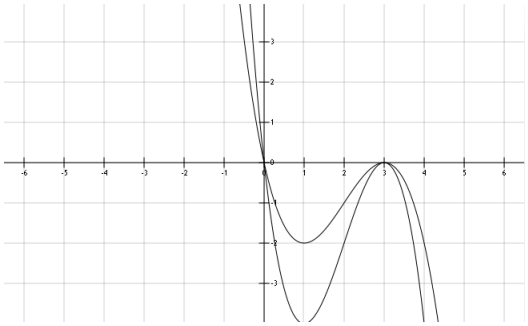
(6.)



$f(x) = x^2(x-4)(x+4)$

$= x^4-16x^2$

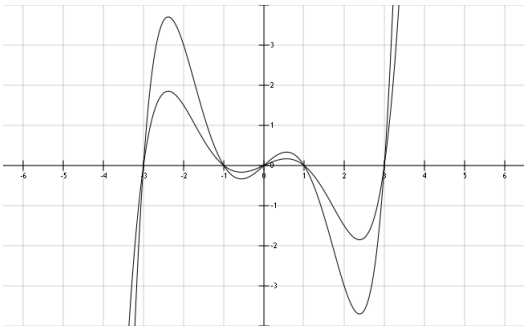
(7.)



$f(x) = -x(x-3)^2$

$= -x^3+6x^2-9x$

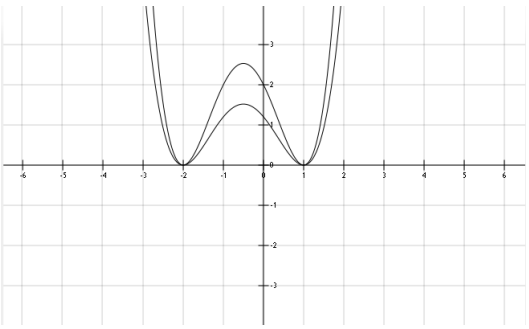
(8.)



$f(x) = x(x-3)(x+3)(x-1)(x+1)$

$= x^5-10x^3+9x$

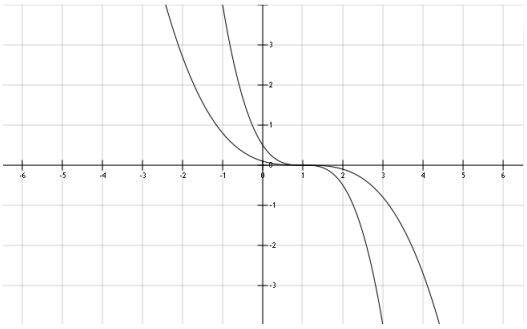
(9.)



$f(x) = (x-1)^2(x+2)^2$

$= x^4+2x^3-3x^2-4x+4$

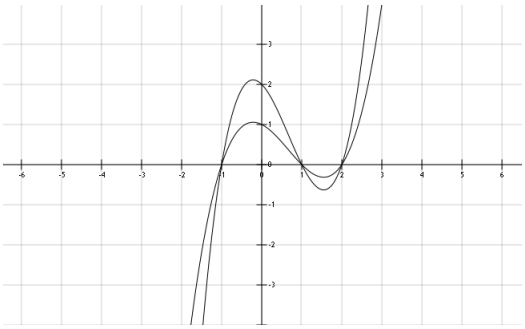
(10.)



$f(x) = (x-1)^3$

$= x^3-3x^2+3x-1$

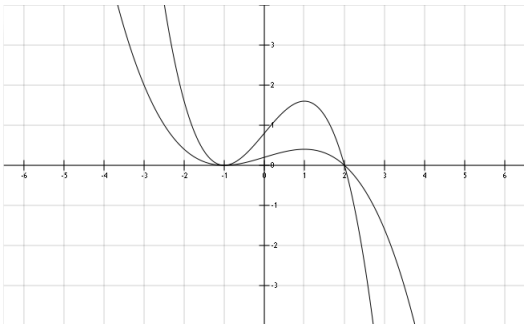
(11.)



$f(x) = -(x^2-1)(x-2)$

$= -x^3+2x^2+x-2$

(12.)



$f(x) = (x+1)^2(x-2)$

$= x^3-3x-2$