

Potenzfunktionen vergleichen

Zeichne jeweils die Graphen der gegebenen Funktionen in ein Koordinatensystem und vergleiche.

Aufgabe 1

a) $y = x^2$ und $y = x^4$

b) $y = x^3$ und $y = x^5$

Überprüfe auf Achsen- bzw. Punktsymmetrie.

Aufgabe 2

a) $y = \frac{1}{2}x^3$ und $y = -\frac{1}{2}x^3$

b) $y = \frac{1}{3}x^2$ und $y = -\frac{1}{3}x^2$

c) $y = \frac{1}{8}x^4$ und $y = -\frac{1}{8}x^4$

d) $y = \frac{3}{4}x^5$ und $y = -\frac{3}{4}x^5$

Aufgabe 3

a) $y = \frac{1}{x}$

b) $y = \frac{4}{x}$

c) $y = -\frac{1}{x}$

d) $y = \frac{-2}{x}$

e) $y = \frac{1}{2x}$

f) $y = \frac{2}{3x}$

Aufgabe 4

Zeichne in ein Koordinatensystem die Graphen der gegebenen Funktionen.

a) $y = \frac{1}{x^2}$

b) $y = -\frac{1}{x^2}$

c) $y = \frac{-2}{x^2}$

d) $y = \frac{3}{x^2}$

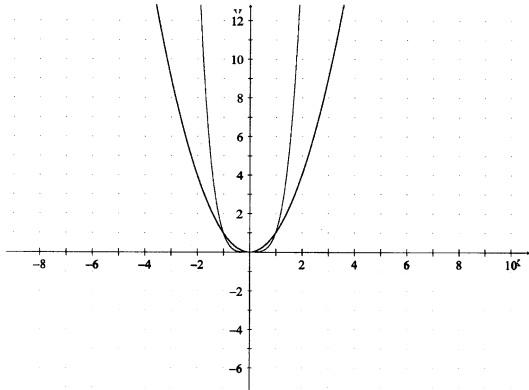
e) $y = \frac{-3}{x^2}$

f) $y = \frac{1}{2x^2}$

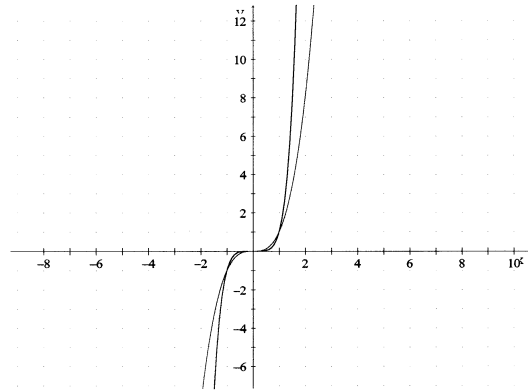
Lösungen

Aufgabe 1

a) $y = x^2$ und $y = x^4$

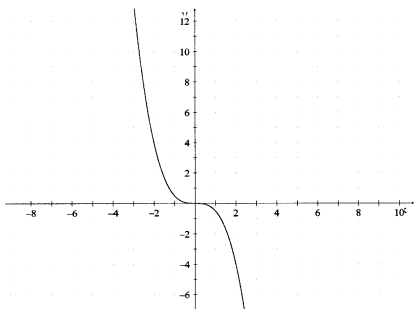
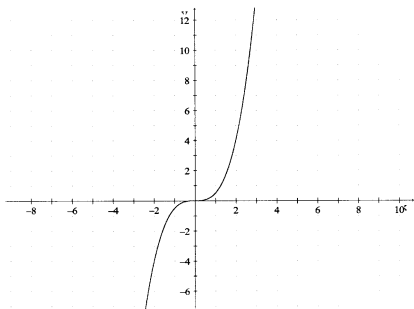


b) $y = x^3$ und $y = x^5$

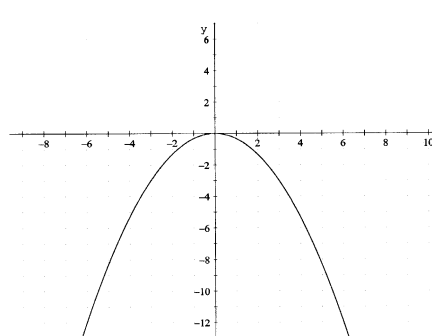
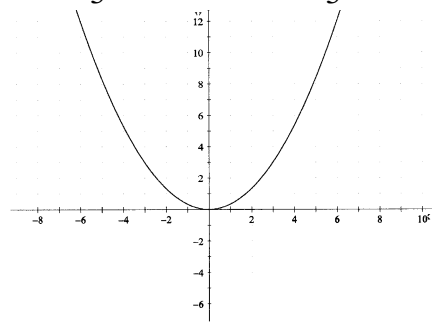


Aufgabe 2

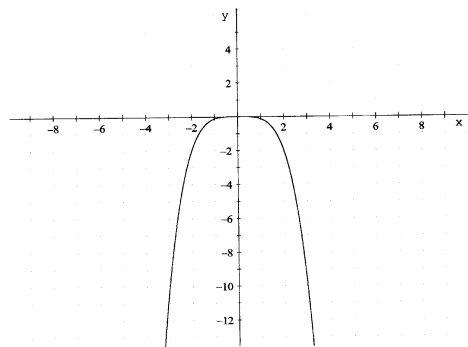
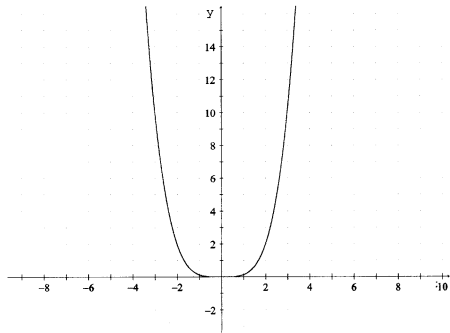
a) $y = \frac{1}{2}x^3$ und $y = -\frac{1}{2}x^3$



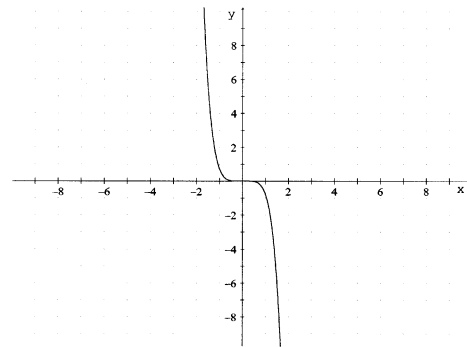
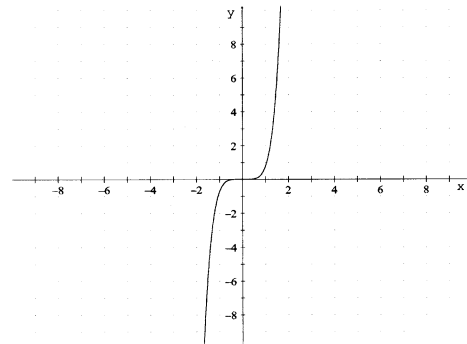
b) $y = \frac{1}{3}x^2$ und $y = -\frac{1}{3}x^2$



c) $y = \frac{1}{8}x^4$ und $y = -\frac{1}{8}x^4$

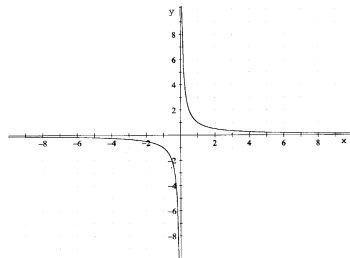


d) $y = \frac{3}{4}x^5$ und $y = -\frac{3}{4}x^5$

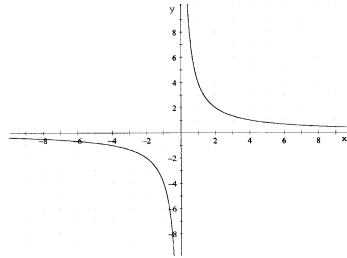


Aufgabe 3

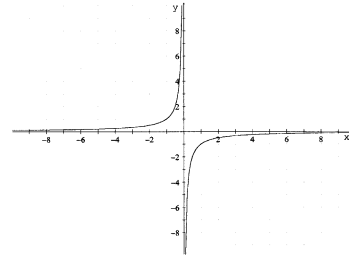
a) $y = \frac{1}{x}$



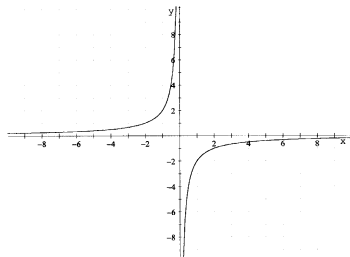
b) $y = \frac{4}{x}$



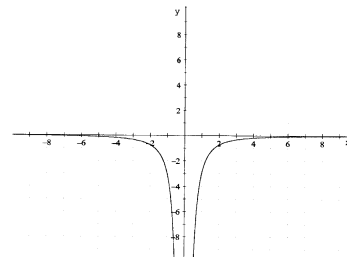
c) $y = -\frac{1}{x}$



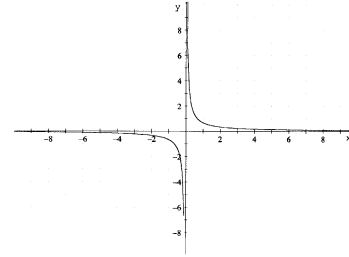
d) $y = \frac{-2}{x}$



e) $y = \frac{1}{2x}$

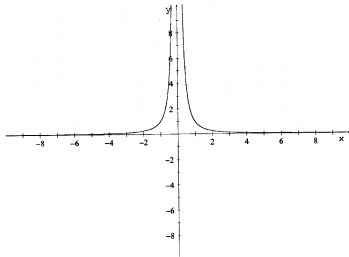


f) $y = \frac{2}{3x}$

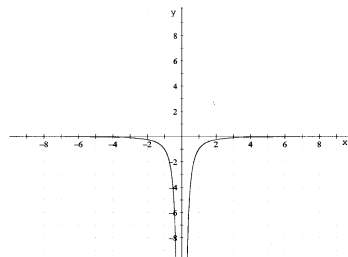


Aufgabe 4

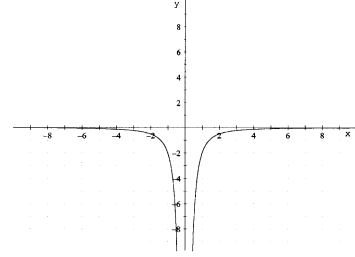
a) $y = \frac{1}{x^2}$



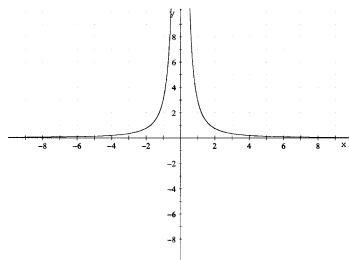
b) $y = -\frac{1}{x^2}$



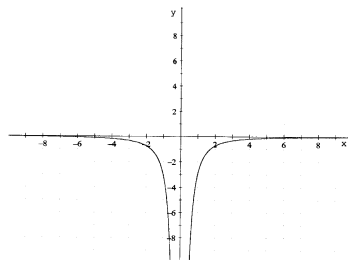
c) $y = \frac{-2}{x^2}$



d) $y = \frac{3}{x^2}$



e) $y = \frac{-3}{x^2}$



f) $y = \frac{1}{2x^2}$

