

# Potenzfunktionen vergleichen

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

## Aufgabe 1

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

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

Überprüfe auf Achsen- bzw. Punktsymmetrie.

## Aufgabe 2

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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

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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

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

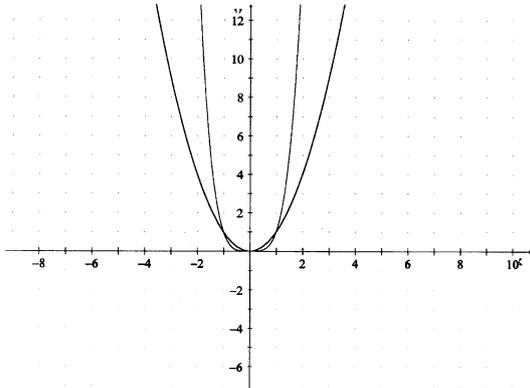
f)  $y = \frac{1}{2x^2}$

# Lösungen

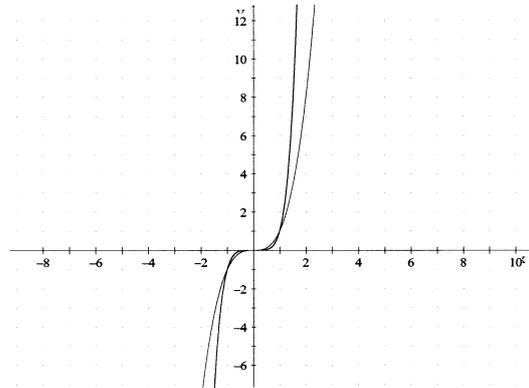
## Aufgabe 1

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



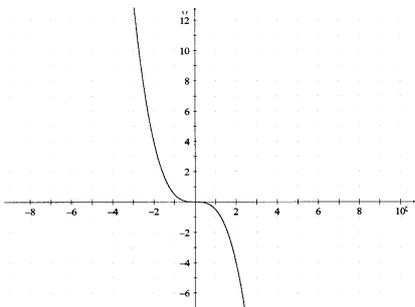
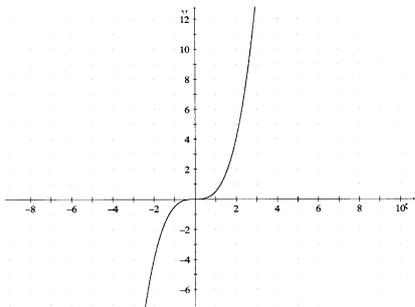
b)  $y = x^3$  und  $y = x^5$



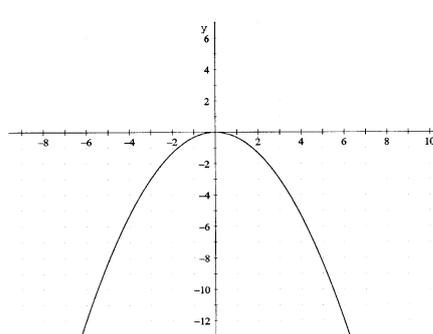
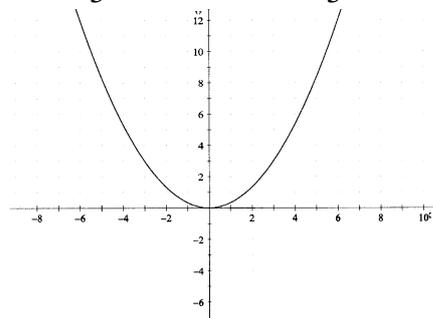
## Aufgabe 2

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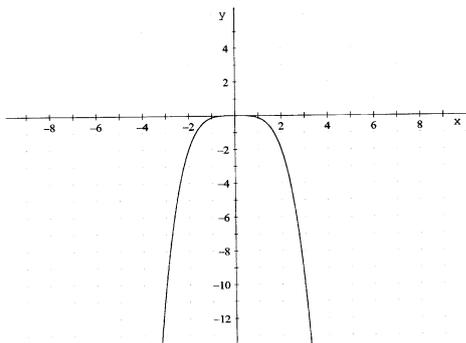
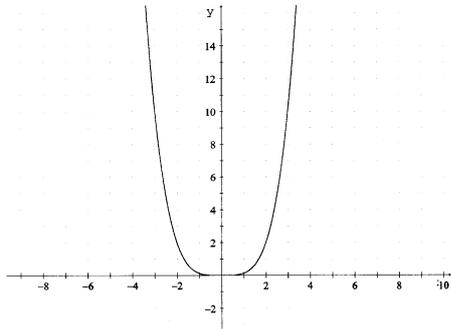
a)  $y = \frac{1}{2}x^3$  und  $y = -\frac{1}{2}x^3$



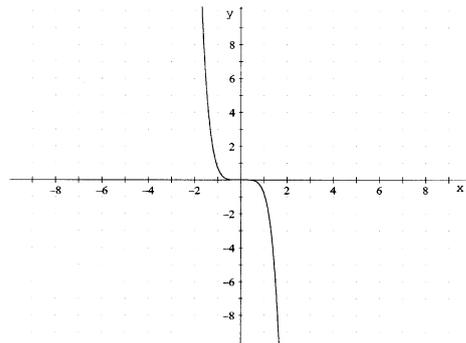
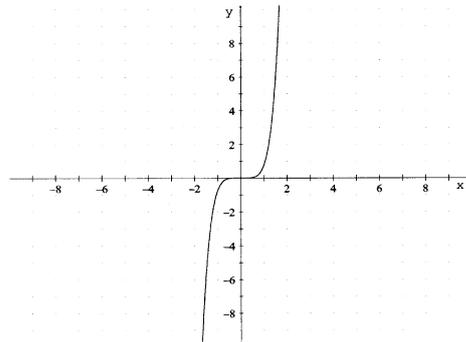
b)  $y = \frac{1}{3}x^2$  und  $y = -\frac{1}{3}x^2$



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



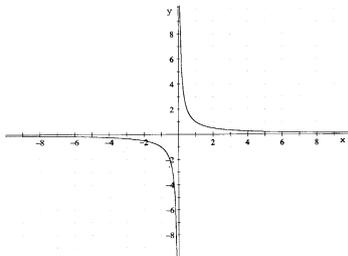
d)  $y = \frac{3}{4}x^5$  und  $y = -\frac{3}{4}x^5$



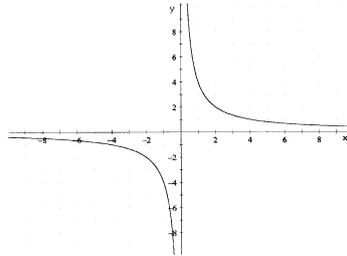
### Aufgabe 3

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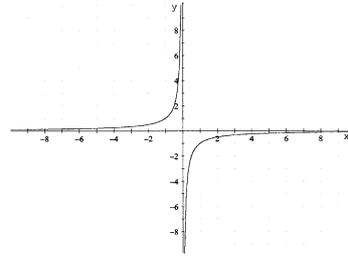
a)  $y = \frac{1}{x}$



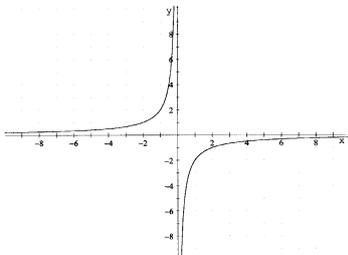
b)  $y = \frac{4}{x}$



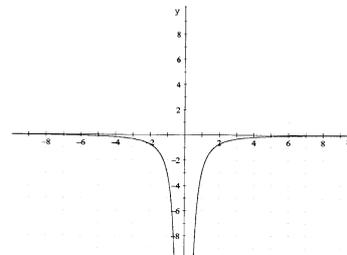
c)  $y = -\frac{1}{x}$



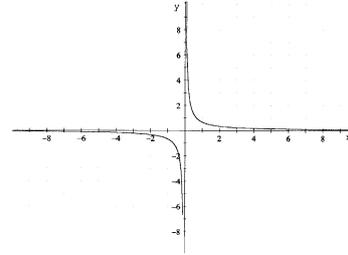
d)  $y = \frac{-2}{x}$



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



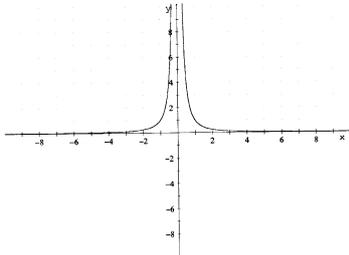
f)  $y = \frac{2}{3x}$



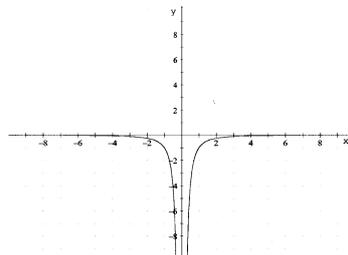
## Aufgabe 4

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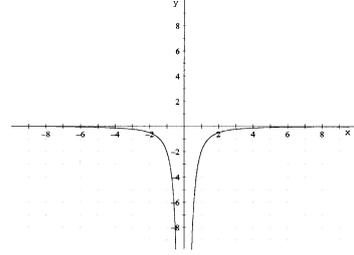
a)  $y = \frac{1}{x^2}$



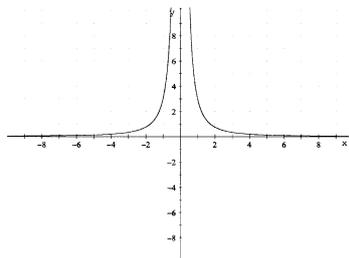
b)  $y = -\frac{1}{x^2}$



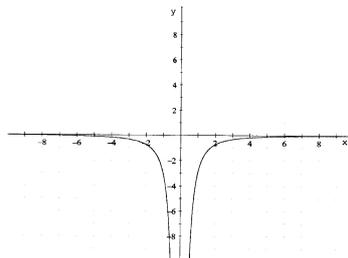
c)  $y = \frac{-2}{x^2}$



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



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



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

