

Lösungen Quadratische Funktionen

① a) $y = x^2 - 6x$
 $y = x(x-6)$
 $x_1 = 0, x_2 = 6$

b) $y = x^2 + 10x$
 $y = x(x+10)$
 $x_1 = 0, x_2 = -10$

c) $y = 2x^2 - 8x$
 $y = 2x(x-4)$
 $x_1 = 0, x_2 = 4$

d) $y = 3x^2 + 9x$
 $y = 3x(x+3)$
 $x_1 = 0, x_2 = -3$

e) $y = 2x^2 + x$
 $y = x(2x+1)$
 $x_1 = 0, x_2 = -\frac{1}{2}$

f) $y = 5x^2 - x$
 $y = x(5x-1)$
 $x_1 = 0, x_2 = \frac{1}{5}$

g) $y = 0,5x^2 - 2x$
 $y = 0,5x(x-4)$
 $x_1 = 0, x_2 = 4$

h) $y = 0,2x^2 + 6x$
 $y = 0,2x(x+30)$
 $x_1 = 0, x_2 = -30$

② a) $y = x^2 - 10x$
 $y = x(x-10)$
 $S_1(0/0), S_2(10/0)$
 $y = (x-5)^2 - 25$
 $S(5|-25)$

b) $y = x^2 + 8x$
 $y = x(x+8)$
 $S_1(0/0), S_2(-8/0)$
 $y = (x+4)^2 - 16$
 $S(-4|-16)$

c) $y = x^2 - 14x$
 $y = x(x-14)$
 $S_1(0/0), S_2(14/0)$
 $y = (x-7)^2 - 49$
 $S(7|-49)$

d) $y = x^2 + x$
 $y = x(x+1)$
 $S_1(0/0), S_2(-1/0)$
 $y = (x+\frac{1}{2})^2 - \frac{1}{4}$
 $S(-\frac{1}{2} | -\frac{1}{4})$

③ a) $y = x^2 + 6x + 10$
 $y = (x+3)^2 + 1$

b) $y = x^2 + 10x + 5$
 $y = (x+5)^2 - 20$

c) $y = x^2 - 4x + 4$
 $y = (x-2)^2$

d) $y = x^2 - x + 3$
 $y = (x-\frac{1}{2})^2 + 2\frac{3}{4}$

e) $y = x^2 + 2x + 1$
 $y = (x+1)^2$

f) $y = x^2 - 3x - 1$
 $= (x-\frac{3}{2})^2 - \frac{13}{4}$

g) $y = x^2 + x + 2$
 $y = (x+\frac{1}{2})^2 + 1\frac{3}{4}$

h) $y = x^2 - x + 6$
 $y = (x-\frac{1}{2})^2 + 5\frac{3}{4}$