

**160 Funktionsgleichungen für Parabeln in verschiedenen Formen, Scheitelpunkt und Achsenschnittpunkte**

Nr.	$f(x) = a_2x^2 + a_1x + a_0$	$f(x) = a_2(x - x_S)^2 + y_S$	$S(x_S   y_S)$	$P_y(0   y_S)$	$P_{x_1}(x_1   0)$	$P_{x_2}(x_2   0)$	Bemerkungen
001	$f(x) = x^2 + \frac{1}{2}x + 1$	$f(x) = \left(x + \frac{1}{4}\right)^2 + \frac{15}{16}$	$S\left(-\frac{1}{4}   \frac{15}{16}\right)$	$P_y(0   1)$			keine Nullstellen
002	$f(x) = x^2 + x - 3$	$f(x) = \left(x + \frac{1}{2}\right)^2 - \frac{13}{4}$	$S\left(-\frac{1}{2}   -\frac{13}{4}\right)$	$P_y(0   -3)$	$P_{x_1}(-2,30   0)$	$P_{x_2}(1,30   0)$	$P_{x_{1/2}}\left(-\frac{1}{2} \pm \sqrt{\frac{13}{4}}   0\right)$
003	$f(x) = x^2 + x - 5$	$f(x) = \left(x + \frac{1}{2}\right)^2 - \frac{21}{4}$	$S\left(-\frac{1}{2}   -\frac{21}{4}\right)$	$P_y(0   -5)$	$P_{x_1}(-2,79   0)$	$P_{x_2}(1,79   0)$	$P_{x_{1/2}}\left(-\frac{1}{2} \pm \sqrt{\frac{21}{4}}   0\right)$
004	$f(x) = x^2 + 2x + 5$	$f(x) = (x + 1)^2 - 4$	$S(-1   -4)$	$P_y(0   5)$			keine Nullstellen
005	$f(x) = x^2 + 2x - 1$	$f(x) = (x + 1)^2 - 2$	$S(-1   -2)$	$P_y(0   -1)$	$P_{x_1}(-2,41   0)$	$P_{x_2}(0,41   0)$	$P_{x_{1/2}}(-1 \pm \sqrt{2}   0)$
006	$f(x) = x^2 + 4x + 1$	$f(x) = (x + 2)^2 - 3$	$S(-2   -3)$	$P_y(0   1)$	$P_{x_1}(-3,73   0)$	$P_{x_2}(-0,27   0)$	$P_{x_{1/2}}(-2 \pm \sqrt{3}   0)$
007	$f(x) = x^2 + 4x + 2$	$f(x) = (x + 2)^2 - 2$	$S(-2   -2)$	$P_y(0   2)$	$P_{x_1}(-3,41   0)$	$P_{x_2}(-0,59   0)$	$P_{x_{1/2}}(-2 \pm \sqrt{2}   0)$
008	$f(x) = x^2 + 4x - 1$	$f(x) = (x + 2)^2 - 5$	$S(-2   -5)$	$P_y(0   -1)$	$P_{x_1}(-4,24   0)$	$P_{x_2}(0,24   0)$	$P_{x_{1/2}}(-2 \pm \sqrt{5}   0)$
009	$f(x) = x^2 + 4x - 5$	$f(x) = (x + 2)^2 - 9$	$S(-2   -9)$	$P_y(0   -5)$	$P_{x_1}(-5   0)$	$P_{x_2}(1   0)$	
010	$f(x) = x^2 + 5x - 2$	$f(x) = \left(x + \frac{5}{2}\right)^2 - \frac{33}{4}$	$S\left(-\frac{5}{2}   -\frac{33}{4}\right)$	$P_y(0   -2)$	$P_{x_1}(-5,37   0)$	$P_{x_2}(0,37   0)$	$P_{x_{1/2}}\left(-\frac{5}{2} \pm \sqrt{\frac{33}{4}}   0\right)$
011	$f(x) = x^2 + 5x - 5$	$f(x) = \left(x + \frac{5}{2}\right)^2 - \frac{45}{4}$	$S\left(-\frac{5}{2}   -\frac{45}{4}\right)$	$P_y(0   -5)$	$P_{x_1}(-5,85   0)$	$P_{x_2}(0,85   0)$	$P_{x_{1/2}}\left(-\frac{5}{2} \pm \sqrt{\frac{45}{4}}   0\right)$
012	$f(x) = x^2 + 6x + 4$	$f(x) = (x + 3)^2 - 5$	$S(-3   -5)$	$P_y(0   4)$	$P_{x_1}(-5,24   0)$	$P_{x_2}(-0,76   0)$	$P_{x_{1/2}}(-3 \pm \sqrt{5}   0)$
013	$f(x) = x^2 - 3x + 3,5$	$f(x) = \left(x - \frac{3}{2}\right)^2 + \frac{5}{4}$	$S\left(\frac{3}{2}   \frac{5}{4}\right)$	$P_y(0   3,5)$			keine Nullstellen
014	$f(x) = x^2 - 4x + 1$	$f(x) = (x - 2)^2 - 3$	$S(2   -3)$	$P_y(0   1)$	$P_{x_1}(0,27   0)$	$P_{x_2}(3,73   0)$	$P_{x_{1/2}}(2 \pm \sqrt{3}   0)$
015	$f(x) = x^2 - 4x + 2$	$f(x) = (x - 2)^2 - 2$	$S(2   -2)$	$P_y(0   2)$	$P_{x_1}(0,59   0)$	$P_{x_2}(3,41   0)$	$P_{x_{1/2}}(2 \pm \sqrt{2}   0)$

016	$f(x) = x^2 - 4x + 9$	$f(x) = (x-2)^2 + 5$	$S(2 5)$	$P_y(0 9)$			keine Nullstellen
017	$f(x) = x^2 - 6x + 8$	$f(x) = (x-3)^2 - 1$	$S(3 -1)$	$P_y(0 8)$	$P_{x_1}(2 0)$	$P_{x_2}(4 0)$	
018	$f(x) = -x^2 + \frac{1}{2}x - 2$	$f(x) = -\left(x - \frac{1}{4}\right)^2 - \frac{31}{16}$	$S\left(\frac{1}{4}   -\frac{31}{16}\right)$	$P_y(0 -2)$			keine Nullstellen
019	$f(x) = -x^2 + x + 6$	$f(x) = -\left(x - \frac{1}{2}\right)^2 + \frac{25}{4}$	$S\left(\frac{1}{2}   \frac{25}{4}\right)$	$P_y(0 6)$	$P_{x_1}(-2 0)$	$P_{x_2}(3 0)$	
020	$f(x) = -x^2 + 2x + 1$	$f(x) = -(x-1)^2 + 2$	$S(1 2)$	$P_y(0 1)$	$P_{x_1}(-0,41 0)$	$P_{x_1}(2,41 0)$	$P_{x_{1/2}}(1 \pm \sqrt{2} 0)$
021	$f(x) = -x^2 + 4x - 9$	$f(x) = -(x-2)^2 - 5$	$S(2 -5)$	$P_y(0 -9)$			keine Nullstellen
022	$f(x) = -x^2 + 5x - 5$	$f(x) = -\left(x - \frac{5}{2}\right)^2 + \frac{5}{4}$	$S\left(\frac{5}{2}   \frac{5}{4}\right)$	$P_y(0 -5)$	$P_{x_1}(1,38 0)$	$P_{x_1}(3,62 0)$	$P_{x_{1/2}}\left(\frac{5}{2} \pm \sqrt{\frac{5}{4}}   0\right)$
023	$f(x) = -x^2 + 6x + 4$	$f(x) = -(x-3)^2 + 13$	$S(3 13)$	$P_y(0 4)$	$P_{x_1}(-0,61 0)$	$P_{x_1}(6,61 0)$	$P_{x_{1/2}}(3 \pm \sqrt{13} 0)$
024	$f(x) = -x^2 + 8x - 9$	$f(x) = -(x-4)^2 + 7$	$S(4 7)$	$P_y(0 -9)$	$P_{x_1}(1,35 0)$	$P_{x_1}(6,25 0)$	$P_{x_{1/2}}(4 \pm \sqrt{7} 0)$
025	$f(x) = -x^2 - x + 2,5$	$f(x) = -\left(x + \frac{1}{2}\right)^2 + \frac{11}{4}$	$S\left(-\frac{1}{2}   \frac{11}{4}\right)$	$P_y(0 2,5)$	$P_{x_1}(-1,16 0)$	$P_{x_1}(2,16 0)$	$P_{x_{1/2}}\left(\frac{1}{2} \pm \sqrt{\frac{11}{4}}   0\right)$
026	$f(x) = -x^2 - x + 6$	$f(x) = -\left(x + \frac{1}{2}\right)^2 + \frac{25}{4}$	$S\left(-\frac{1}{2}   \frac{25}{4}\right)$	$P_y(0 6)$	$P_{x_1}(-3 0)$	$P_{x_2}(2 0)$	
027	$f(x) = -x^2 - 2x + 1$	$f(x) = -(x+1)^2 + 2$	$S(-1 2)$	$P_y(0 1)$	$P_{x_1}(-2,41 0)$	$P_{x_1}(0,41 0)$	$P_{x_{1/2}}(1 \pm \sqrt{2} 0)$
028	$f(x) = -x^2 - 2x - 1$	$f(x) = -(x+1)^2$	$S(-1 0)$	$P_y(0 -1)$	$P_{x_1}(-1 0)$	$P_{x_2}(-1 0)$	doppelte Nullstelle
029	$f(x) = -x^2 - 3x + 3,5$	$f(x) = -\left(x + \frac{3}{2}\right)^2 + \frac{23}{4}$	$S\left(-\frac{3}{2}   \frac{23}{4}\right)$	$P_y(0 3,5)$	$P_{x_1}(-3,90 0)$	$P_{x_1}(0,90 0)$	$P_{x_{1/2}}\left(-\frac{3}{2} \pm \sqrt{\frac{23}{4}}   0\right)$
030	$f(x) = -x^2 - 4x + 1$	$f(x) = -(x+2)^2 + 5$	$S(-2 5)$	$P_y(0 1)$	$P_{x_1}(-4,24 0)$	$P_{x_2}(0,24 0)$	$P_{x_{1/2}}(-2 \pm \sqrt{5} 0)$
031	$f(x) = -x^2 - 4x + 2$	$f(x) = -(x+2)^2 + 6$	$S(-2 6)$	$P_y(0 2)$	$P_{x_1}(-4,45 0)$	$P_{x_2}(0,45 0)$	$P_{x_{1/2}}(-2 \pm \sqrt{6} 0)$
032	$f(x) = -x^2 - 4x + 3$	$f(x) = -(x+2)^2 + 7$	$S(-2 7)$	$P_y(0 3)$	$P_{x_1}(-4,65 0)$	$P_{x_2}(0,65 0)$	$P_{x_{1/2}}(-2 \pm \sqrt{7} 0)$

033	$f(x) = -x^2 - 4x + 9$	$f(x) = -(x+2)^2 + 13$	$S(-2 13)$	$P_y(0 9)$	$P_{x_1}(-5,61 0)$	$P_{x_1}(1,61 0)$	$P_{x_{1/2}}(-2 \pm \sqrt{13} 0)$
034	$f(x) = -x^2 - 6x + 8$	$f(x) = -(x+3)^2 + 17$	$S(-3 17)$	$P_y(0 8)$	$P_{x_1}(-7,12 0)$	$P_{x_1}(1,12 0)$	$P_{x_{1/2}}(-3 \pm \sqrt{17} 0)$
035	$f(x) = x^2 + 9x$	$f(x) = \left(x + \frac{9}{2}\right)^2 - \frac{81}{4}$	$S\left(-\frac{9}{2}   -\frac{81}{4}\right)$	$P_y(0 0)$	$P_{x_1}(-9 0)$	$P_{x_2}(0 0)$	
036	$f(x) = x^2 + x$	$f(x) = \left(x + \frac{1}{2}\right)^2 - \frac{1}{4}$	$S\left(-\frac{1}{2}   -\frac{1}{4}\right)$	$P_y(0 0)$	$P_{x_1}(-1 0)$	$P_{x_2}(0 0)$	
037	$f(x) = x^2 + 2x$	$f(x) = (x+1)^2 - 1$	$S(-1 -1)$	$P_y(0 0)$	$P_{x_1}(-2 0)$	$P_{x_2}(0 0)$	
038	$f(x) = x^2 + 3x$	$f(x) = \left(x + \frac{3}{2}\right)^2 - \frac{9}{4}$	$S\left(-\frac{3}{2}   -\frac{9}{4}\right)$	$P_y(0 0)$	$P_{x_1}(-3 0)$	$P_{x_2}(0 0)$	
039	$f(x) = x^2 + 4x$	$f(x) = (x+2)^2 - 4$	$S(-2 -4)$	$P_y(0 0)$	$P_{x_1}(-4 0)$	$P_{x_2}(0 0)$	
040	$f(x) = x^2 - 3x$	$f(x) = \left(x + \frac{5}{2}\right)^2 - \frac{25}{4}$	$S\left(-\frac{5}{2}   -\frac{25}{4}\right)$	$P_y(0 0)$	$P_{x_1}(-5 0)$	$P_{x_2}(0 0)$	
041	$f(x) = x^2 + 6x$	$f(x) = (x+3)^2 - 9$	$S(-3 -9)$	$P_y(0 0)$	$P_{x_1}(-6 0)$	$P_{x_2}(0 0)$	
042	$f(x) = x^2 - x$	$f(x) = \left(x - \frac{1}{2}\right)^2 - \frac{1}{4}$	$S\left(\frac{1}{2}   -\frac{1}{4}\right)$	$P_y(0 0)$	$P_{x_1}(0 0)$	$P_{x_2}(1 0)$	
043	$f(x) = x^2 - 2x$	$f(x) = (x-1)^2 - 1$	$S(1 -1)$	$P_y(0 0)$	$P_{x_1}(0 0)$	$P_{x_2}(2 0)$	
044	$f(x) = x^2 - 3x$	$f(x) = \left(x - \frac{3}{2}\right)^2 - \frac{9}{4}$	$S\left(\frac{3}{2}   -\frac{9}{4}\right)$	$P_y(0 0)$	$P_{x_1}(0 0)$	$P_{x_2}(3 0)$	
045	$f(x) = x^2 - 4x$	$f(x) = (x-2)^2 - 4$	$S(2 -4)$	$P_y(0 0)$	$P_{x_1}(0 0)$	$P_{x_2}(4 0)$	
046	$f(x) = -x^2 + x$	$f(x) = -\left(x - \frac{1}{2}\right)^2 + \frac{1}{4}$	$S\left(\frac{1}{2}   \frac{1}{4}\right)$	$P_y(0 0)$	$P_{x_1}(0 0)$	$P_{x_2}(1 0)$	
047	$f(x) = -x^2 + 2x$	$f(x) = -(x-1)^2 + 1$	$S(1 1)$	$P_y(0 0)$	$P_{x_1}(0 0)$	$P_{x_2}(2 0)$	
048	$f(x) = -x^2 + 3x$	$f(x) = -\left(x - \frac{3}{2}\right)^2 + \frac{9}{4}$	$S\left(\frac{3}{2}   \frac{9}{4}\right)$	$P_y(0 0)$	$P_{x_1}(0 0)$	$P_{x_2}(3 0)$	
049	$f(x) = -x^2 + 4x$	$f(x) = -(x-2)^2 + 4$	$S(2 4)$	$P_y(0 0)$	$P_{x_1}(0 0)$	$P_{x_2}(4 0)$	

050	$f(x) = -x^2 - x$	$f(x) = -\left(x + \frac{1}{2}\right)^2 + \frac{1}{4}$	$S\left(-\frac{1}{2} \mid \frac{1}{4}\right)$	$P_y(0 \mid 0)$	$P_{x_1}(-1 \mid 0)$	$P_{x_2}(0 \mid 0)$	
051	$f(x) = -x^2 - 2x$	$f(x) = -(x+1)^2 + 1$	$S(-1 \mid 1)$	$P_y(0 \mid 0)$	$P_{x_1}(-2 \mid 0)$	$P_{x_2}(0 \mid 0)$	
052	$f(x) = -x^2 - 3x$	$f(x) = -\left(x + \frac{3}{2}\right)^2 + \frac{9}{4}$	$S\left(-\frac{3}{2} \mid \frac{9}{4}\right)$	$P_y(0 \mid 0)$	$P_{x_1}(-3 \mid 0)$	$P_{x_2}(0 \mid 0)$	
053	$f(x) = x^2 - \frac{1}{9}$	$f(x) = x^2 - \frac{1}{9}$	$S\left(0 \mid -\frac{1}{9}\right)$	$P_y\left(0 \mid -\frac{1}{9}\right)$	$P_{x_1}\left(-\frac{1}{3} \mid 0\right)$	$P_{x_2}\left(\frac{1}{3} \mid 0\right)$	
054	$f(x) = x^2 - \frac{1}{4}$	$f(x) = x^2 - \frac{1}{4}$	$S\left(0 \mid -\frac{1}{4}\right)$	$P_y\left(0 \mid -\frac{1}{4}\right)$	$P_{x_1}\left(-\frac{1}{2} \mid 0\right)$	$P_{x_2}\left(\frac{1}{2} \mid 0\right)$	
055	$f(x) = x^2 - \frac{4}{9}$	$f(x) = x^2 - \frac{4}{9}$	$S\left(0 \mid -\frac{4}{9}\right)$	$P_y\left(0 \mid -\frac{4}{9}\right)$	$P_{x_1}\left(-\frac{2}{3} \mid 0\right)$	$P_{x_2}\left(\frac{2}{3} \mid 0\right)$	
056	$f(x) = x^2 - \frac{9}{4}$	$f(x) = x^2 - \frac{9}{4}$	$S\left(0 \mid -\frac{9}{4}\right)$	$P_y\left(0 \mid -\frac{9}{4}\right)$	$P_{x_1}\left(-\frac{3}{2} \mid 0\right)$	$P_{x_2}\left(\frac{3}{2} \mid 0\right)$	
057	$f(x) = x^2 - 1$	$f(x) = x^2 - 1$	$S(0 \mid -1)$	$P_y(0 \mid -1)$	$P_{x_1}(-1 \mid 0)$	$P_{x_2}(1 \mid 0)$	
058	$f(x) = x^2 - 2$	$f(x) = x^2 - 2$	$S(0 \mid -2)$	$P_y(0 \mid -2)$	$P_{x_1}(-1,41 \mid 0)$	$P_{x_1}(1,41 \mid 0)$	$P_{x_{1/2}}(\pm\sqrt{2} \mid 0)$
059	$f(x) = x^2 - 3$	$f(x) = x^2 - 3$	$S(0 \mid -3)$	$P_y(0 \mid -3)$	$P_{x_1}(-1,73 \mid 0)$	$P_{x_1}(1,73 \mid 0)$	$P_{x_{1/2}}(\pm\sqrt{3} \mid 0)$
060	$f(x) = x^2 - 4$	$f(x) = x^2 - 4$	$S(0 \mid -4)$	$P_y(0 \mid -4)$	$P_{x_1}(-2 \mid 0)$	$P_{x_2}(2 \mid 0)$	
061	$f(x) = x^2 - 9$	$f(x) = x^2 - 9$	$S(0 \mid -9)$	$P_y(0 \mid -9)$	$P_{x_1}(-3 \mid 0)$	$P_{x_2}(3 \mid 0)$	
062	$f(x) = -x^2 + 1$	$f(x) = -x^2 + 1$	$S(0 \mid 1)$	$P_y(0 \mid 1)$	$P_{x_1}(-1 \mid 0)$	$P_{x_2}(1 \mid 0)$	
063	$f(x) = -x^2 + 2$	$f(x) = -x^2 + 2$	$S(0 \mid 2)$	$P_y(0 \mid 2)$	$P_{x_1}(-1,41 \mid 0)$	$P_{x_1}(1,41 \mid 0)$	$P_{x_{1/2}}(\pm\sqrt{2} \mid 0)$
064	$f(x) = -x^2 + \frac{9}{4}$	$f(x) = -x^2 + \frac{9}{4}$	$S\left(0 \mid \frac{9}{4}\right)$	$P_y\left(0 \mid \frac{9}{4}\right)$	$P_{x_1}\left(-\frac{3}{2} \mid 0\right)$	$P_{x_2}\left(\frac{3}{2} \mid 0\right)$	
065	$f(x) = -x^2 + 3$	$f(x) = -x^2 + 3$	$S(0 \mid 3)$	$P_y(0 \mid 3)$	$P_{x_1}(-1,73 \mid 0)$	$P_{x_1}(1,73 \mid 0)$	$P_{x_{1/2}}(\pm\sqrt{3} \mid 0)$
066	$f(x) = -x^2 + 4$	$f(x) = -x^2 + 4$	$S(0 \mid 4)$	$P_y(0 \mid 4)$	$P_{x_1}(-2 \mid 0)$	$P_{x_2}(2 \mid 0)$	
067	$f(x) = -x^2 + 9$	$f(x) = -x^2 + 9$	$S(0 \mid 9)$	$P_y(0 \mid 9)$	$P_{x_1}(-3 \mid 0)$	$P_{x_2}(3 \mid 0)$	
068	$f(x) = x^2 + 2x - 2$	$f(x) = (x+1)^2 - 3$	$S(-1 \mid -3)$	$P_y(0 \mid -2)$	$P_{x_1}(-2,73 \mid 0)$	$P_{x_1}(0,73 \mid 0)$	$P_{x_{1/2}}(-1 \pm \sqrt{3} \mid 0)$

069	$f(x) = x^2 - 2x$	$f(x) = (x-1)^2 - 1$	S(1 -1)	$P_y(0 0)$	$P_{x_1}(0 0)$	$P_{x_2}(2 0)$	
070	$f(x) = x^2 - 2x - 1$	$f(x) = (x+1)^2 - 2$	S(1 -2)	$P_y(0 -1)$	$P_{x_1}(-2,41 0)$	$P_{x_2}(0,41 0)$	$P_{x_{1/2}}(-1 \pm \sqrt{2} 0)$
071	$f(x) = x^2 - 4x + 3$	$f(x) = (x-2)^2 - 1$	S(2 -1)	$P_y(0 3)$	$P_{x_1}(1 0)$	$P_{x_2}(3 0)$	
072	$f(x) = -x^2 - 2x - 1$	$f(x) = -(x+1)^2$	S(-1 0)	$P_y(0 -1)$	$P_{x_1}(-1 0)$	$P_{x_2}(-1 0)$	doppelte Nullstelle
073	$f(x) = -x^2 - 4x - 4$	$f(x) = -(x+2)^2$	S(-2 0)	$P_y(0 -4)$	$P_{x_1}(-2 0)$	$P_{x_2}(-2 0)$	doppelte Nullstelle
074	$f(x) = -x^2 - 2x - 1$	$f(x) = -(x-1)^2$	S(1 0)	$P_y(0 -1)$	$P_{x_1}(1 0)$	$P_{x_2}(1 0)$	doppelte Nullstelle
075	$f(x) = -x^2 + 2x - 2$	$f(x) = -(x-1)^2 - 1$	S(1 -1)	$P_y(0 -2)$			keine Nullstelle
076	$f(x) = \frac{1}{2}x^2 + 2x + 3$	$f(x) = \frac{1}{2}(x+2)^2 + 1$	S(-2 1)	$P_y(0 3)$			keine Nullstelle
077	$f(x) = \frac{1}{2}x^2 - x - \frac{17}{2}$	$f(x) = \frac{1}{2}(x-1)^2 - 9$	S(1 -9)	$P_y\left(0\left -\frac{17}{2}\right.\right)$	$P_{x_1}(-3,24 0)$	$P_{x_2}(5,24 0)$	$P_{x_{1/2}}(1 \pm \sqrt{18} 0)$
078	$f(x) = \frac{1}{2}x^2 - 4x + 5$	$f(x) = \frac{1}{2}(x-4)^2 - 3$	S(4 -3)	$P_y(0 5)$	$P_{x_1}(1,55 0)$	$P_{x_2}(6,45 0)$	$P_{x_{1/2}}(4 \pm \sqrt{6} 0)$
079	$f(x) = -\frac{1}{2}x^2 - 2x + 6$	$f(x) = -\frac{1}{2}(x+2)^2 + 8$	S(-2 8)	$P_y(0 6)$	$P_{x_1}(-6 0)$	$P_{x_2}(2 0)$	
080	$f(x) = -\frac{1}{3}x^2 + \frac{2}{3}x + \frac{5}{3}$	$f(x) = -\frac{1}{3}(x-1)^2 + 2$	S(1 2)	$P_y\left(0\left \frac{5}{3}\right.\right)$	$P_{x_1}(-1,45 0)$	$P_{x_2}(3,45 0)$	$P_{x_{1/2}}(1 \pm \sqrt{6} 0)$
081	$f(x) = -\frac{1}{9}x^2 + \frac{2}{9}x + \frac{8}{9}$	$f(x) = -\frac{1}{9}(x-1)^2 + 1$	S(1 1)	$P_y\left(0\left \frac{8}{9}\right.\right)$	$P_{x_1}(-2 0)$	$P_{x_2}(4 0)$	
082	$f(x) = x^2 - 4x + 5$	$f(x) = (x-2)^2 + 1$	S(2 1)	$P_y(0 5)$			keine Nullstelle
083	$f(x) = 2x^2 - 4x + 3$	$f(x) = 2(x-1)^2 + 1$	S(1 1)	$P_y(0 3)$			keine Nullstelle
084	$f(x) = -x^2 - 4x - 7$	$f(x) = -(x+2)^2 - 3$	S(-2 -3)	$P_y(0 -7)$			keine Nullstelle
085	$f(x) = -2x^2 + 8x - 11$	$f(x) = -2(x-2)^2 - 3$	S(2 -3)	$P_y(0 -11)$			keine Nullstelle
086	$f(x) = -2x^2 + 10x - 14$	$f(x) = -2\left(x - \frac{5}{2}\right)^2 - \frac{3}{2}$	$S\left(\frac{5}{2}\left -\frac{3}{2}\right.\right)$	$P_y(0 -14)$			keine Nullstelle

087	$f(x) = -4x^2 + 16x - 16$	$f(x) = -4(x-2)^2$	$S(2 0)$	$P_y\left(0 \mid \frac{8}{9}\right)$	$P_{x_1}(2 0)$	$P_{x_2}(2 0)$	doppelte Nullstelle
088	$f(x) = -4x^2 - 4x - \frac{1}{2}$	$f(x) = -4\left(x + \frac{1}{2}\right)^2 + \frac{1}{2}$	$S\left(-\frac{1}{2} \mid \frac{1}{2}\right)$	$P_y\left(0 \mid -\frac{1}{2}\right)$	$P_{x_1}(-0,85 0)$	$P_{x_2}(-0,15 0)$	$P_{x_{1/2}}\left(-\frac{1}{2} \pm \sqrt{\frac{1}{8}} \mid 0\right)$
089	$f(x) = \frac{1}{2}x^2 - 6x$	$f(x) = \frac{1}{2}(x-6)^2 - 18$	$S(6 -18)$	$P_y(0 0)$	$P_{x_1}(0 0)$	$P_{x_2}(12 0)$	$f(x) = 0,5x(x-12)$
090	$f(x) = \frac{1}{2}x^2 + \frac{1}{2}x - 6$	$f(x) = \frac{1}{2}\left(x + \frac{1}{2}\right)^2 - \frac{49}{8}$	$S\left(-\frac{1}{2} \mid -\frac{49}{8}\right)$	$P_y(0 -6)$	$P_{x_1}(-4 0)$	$P_{x_2}(3 0)$	$f(x) = 0,5(x-3)(x+4)$
091	$f(x) = \frac{1}{2}x^2 - \frac{1}{2}x - 3$	$f(x) = \frac{1}{2}\left(x - \frac{1}{2}\right)^2 - \frac{25}{8}$	$S\left(\frac{1}{2} \mid -\frac{25}{8}\right)$	$P_y(0 -3)$	$P_{x_1}(-2 0)$	$P_{x_2}(3 0)$	$f(x) = 0,5(x-3)(x+2)$
092	$f(x) = x^2 - x - 6$	$f(x) = \left(x - \frac{1}{2}\right)^2 - \frac{25}{4}$	$S\left(\frac{1}{2} \mid -\frac{25}{4}\right)$	$P_y(0 -6)$	$P_{x_1}(-2 0)$	$P_{x_2}(3 0)$	$f(x) = (x-3)(x+2)$
093	$f(x) = x^2 - 3x + 2$	$f(x) = \left(x - \frac{3}{2}\right)^2 - \frac{1}{4}$	$S\left(\frac{3}{2} \mid -\frac{1}{4}\right)$	$P_y(0 2)$	$P_{x_1}(1 0)$	$P_{x_2}(2 0)$	$f(x) = (x-1)(x-2)$
094	$f(x) = x^2 - x - 6$	$f(x) = \left(x - \frac{1}{2}\right)^2 - \frac{25}{4}$	$S\left(\frac{1}{2} \mid -\frac{25}{4}\right)$	$P_y(0 -6)$	$P_{x_1}(-2 0)$	$P_{x_2}(3 0)$	$f(x) = (x-3)(x+2)$
095	$f(x) = 3x^2 - 3x$	$f(x) = 3\left(x - \frac{1}{2}\right)^2 - \frac{3}{4}$	$S\left(\frac{1}{2} \mid -\frac{3}{4}\right)$	$P_y(0 0)$	$P_{x_1}(0 0)$	$P_{x_2}(1 0)$	$f(x) = 3x(x-1)$
096	$f(x) = -x^2 + 2x$	$f(x) = -(x-1)^2 + 1$	$S(1 1)$	$P_y(0 0)$	$P_{x_1}(0 0)$	$P_{x_2}(2 0)$	$f(x) = -x(x-2)$
097	$f(x) = \frac{1}{2}x^2 - \frac{5}{2}$	$f(x) = \frac{1}{2}x^2 - \frac{5}{2}$	$S\left(0 \mid -\frac{5}{2}\right)$	$P_y\left(0 \mid -\frac{5}{2}\right)$	$P_{x_1}(-2,24 0)$	$P_{x_2}(2,24 0)$	$f(x) = 0,5(x^2 - 5)$ $\pm\sqrt{5}$
098	$f(x) = \frac{1}{2}x^2 - \frac{17}{2}x$	$f(x) = \frac{1}{2}\left(x - \frac{17}{2}\right)^2 - \frac{289}{8}$	$S\left(\frac{17}{2} \mid -\frac{289}{8}\right)$	$P_y(0 0)$	$P_{x_1}(0 0)$	$P_{x_2}(17 0)$	
099	$f(x) = \frac{1}{2}x^2 + \frac{1}{4}x - 2$	$f(x) = \frac{1}{2}\left(x + \frac{1}{4}\right)^2 - \frac{65}{32}$	$S\left(-\frac{1}{4} \mid -\frac{65}{32}\right)$	$P_y(0 -2)$	$P_{x_1}(-2,27 0)$	$P_{x_2}(1,77 0)$	$P_{x_{1/2}}\left(-\frac{1}{4} \pm \sqrt{\frac{65}{16}} \mid 0\right)$
100	$f(x) = \frac{1}{2}x^2 + x + 2$	$f(x) = \frac{1}{2}(x+1)^2 + \frac{3}{2}$	$S\left(-1 \mid \frac{3}{2}\right)$	$P_y(0 2)$			keine Nullstellen

101	$f(x) = \frac{1}{2}x^2 + 2x - 10$	$f(x) = \frac{1}{2}(x+2)^2 - 12$	$S(-2   -12)$	$P_y(0   -10)$	$P_{x_1}(-6,90   0)$	$P_{x_2}(2,90   0)$	$P_{x_{1/2}}(-2 \pm \sqrt{24}   0)$
102	$f(x) = \frac{1}{2}x^2 + \frac{5}{2}x - 6$	$f(x) = \frac{1}{2}\left(x + \frac{5}{2}\right)^2 - \frac{73}{8}$	$S\left(-\frac{5}{2}   -\frac{73}{8}\right)$	$P_y(0   -6)$	$P_{x_1}(-6,77   0)$	$P_{x_2}(1,77   0)$	$P_{x_{1/2}}\left(-\frac{5}{2} \pm \sqrt{\frac{73}{4}}   0\right)$
103	$f(x) = \frac{1}{2}x^2 + \frac{5}{2}x - 10$	$f(x) = \frac{1}{2}\left(x + \frac{5}{2}\right)^2 - \frac{105}{8}$	$S\left(-\frac{5}{2}   -\frac{105}{8}\right)$	$P_y(0   -10)$	$P_{x_1}(-7,62   0)$	$P_{x_2}(2,62   0)$	$P_{x_{1/2}}\left(-\frac{5}{2} \pm \sqrt{\frac{105}{4}}   0\right)$
104	$f(x) = \frac{1}{2}x^2 + 6x - 8$	$f(x) = \frac{1}{2}(x+6)^2 - 26$	$S(6   -26)$	$P_y(0   -8)$	$P_{x_1}(-13,21   0)$	$P_{x_2}(1,21   0)$	$P_{x_{1/2}}(-6 \pm \sqrt{52}   0)$
105	$f(x) = \frac{1}{2}x^2 - 4x + 5$	$f(x) = \frac{1}{2}(x-4)^2 - 3$	$S(4   -3)$	$P_y(0   5)$	$P_{x_1}(1,55   0)$	$P_{x_2}(6,45   0)$	$P_{x_{1/2}}(4 \pm \sqrt{6}   0)$
106	$f(x) = \frac{1}{2}x^2 - x - \frac{15}{2}$	$f(x) = \frac{1}{2}(x-1)^2 - 8$	$S(1   -8)$	$P_y\left(0   -\frac{15}{2}\right)$	$P_{x_1}(-3   0)$	$P_{x_2}(5   0)$	
107	$f(x) = \frac{1}{2}x^2 - 4x + \frac{15}{2}$	$f(x) = \frac{1}{2}(x-4)^2 - \frac{1}{2}$	$S\left(4   -\frac{1}{2}\right)$	$P_y\left(0   \frac{15}{2}\right)$	$P_{x_1}(3   0)$	$P_{x_2}(5   0)$	
108	$f(x) = -\frac{1}{2}x^2 - x$	$f(x) = -\frac{1}{2}(x+1)^2 + \frac{1}{2}$	$S\left(-1   \frac{1}{2}\right)$	$P_y(0   0)$	$P_{x_1}(-2   0)$	$P_{x_2}(0   0)$	
109	$f(x) = -\frac{1}{2}x^2 + 2x - 3$	$f(x) = -\frac{1}{2}(x-2)^2 - 1$	$S(2   -1)$	$P_y(0   -3)$			keine Nullstellen
110	$f(x) = -\frac{1}{2}x^2 - 2x + 6$	$f(x) = -\frac{1}{2}(x+2)^2 + 8$	$S(-2   8)$	$P_y(0   6)$	$P_{x_1}(-6   0)$	$P_{x_2}(2   0)$	
111	$f(x) = -\frac{1}{2}x^2 - 4x + 5$	$f(x) = -\frac{1}{2}(x+4)^2 + 13$	$S(-4   13)$	$P_y(0   5)$	$P_{x_1}(-9,01   0)$	$P_{x_2}(1,01   0)$	$P_{x_{1/2}}(-4 \pm \sqrt{26}   0)$
112	$f(x) = \frac{1}{4}x^2 + 1$	$f(x) = \frac{1}{4}x^2 + 1$	$S(0   1)$	$P_y(0   1)$			keine Nullstellen
113	$f(x) = \frac{1}{4}x^2 + x - 1$	$f(x) = \frac{1}{4}(x+2)^2 - 2$	$S(-2   -2)$	$P_y(0   -1)$	$P_{x_1}(-4,83   0)$	$P_{x_2}(0,83   0)$	$P_{x_{1/2}}(-2 \pm \sqrt{8}   0)$
114	$f(x) = \frac{1}{4}x^2 + 2x - 1$	$f(x) = \frac{1}{4}(x+4)^2 - 5$	$S(-4   -5)$	$P_y(0   -1)$	$P_{x_1}(-8,47   0)$	$P_{x_2}(0,47   0)$	$P_{x_{1/2}}(-4 \pm \sqrt{20}   0)$
115	$f(x) = \frac{1}{4}x^2 + 3x - 5$	$f(x) = \frac{1}{4}(x+6)^2 - 14$	$S(-6   -14)$	$P_y(0   -5)$	$P_{x_1}(-13,48   0)$	$P_{x_2}(1,48   0)$	$P_{x_{1/2}}(-6 \pm \sqrt{56}   0)$

116	$f(x) = \frac{1}{4}x^2 + \frac{11}{2}x + 10$	$f(x) = \frac{1}{4}(x+11)^2 - \frac{81}{4}$	$S\left(-11 \mid -\frac{81}{4}\right)$	$P_y(0 \mid 10)$	$P_{x_1}(-20 \mid 0)$	$P_{x_2}(-2 \mid 0)$	
117	$f(x) = \frac{1}{4}x^2 - \frac{1}{2}x + 1$	$f(x) = \frac{1}{4}(x-1)^2 + \frac{3}{4}$	$S\left(1 \mid \frac{3}{4}\right)$	$P_y(0 \mid 1)$			keine Nullstellen
118	$f(x) = \frac{1}{4}x^2 - 3x + 8$	$f(x) = \frac{1}{4}(x-6)^2 - 1$	$S(6 \mid -1)$	$P_y(0 \mid 8)$	$P_{x_1}(4 \mid 0)$	$P_{x_2}(8 \mid 0)$	
119	$f(x) = \frac{1}{4}x^2 - 3x + 1$	$f(x) = \frac{1}{4}(x-6)^2 - 8$	$S(6 \mid -8)$	$P_y(0 \mid 1)$	$P_{x_1}(0,34 \mid 0)$	$P_{x_2}(11,66 \mid 0)$	$P_{x_{1/2}}(6 \pm \sqrt{32} \mid 0)$
120	$f(x) = \frac{3}{4}x^2 + \frac{1}{4}x - 7$	$f(x) = \frac{3}{4}\left(x + \frac{1}{6}\right)^2 - \frac{337}{48}$	$S\left(-\frac{1}{6} \mid -\frac{337}{48}\right)$	$P_y(0 \mid -7)$	$P_{x_1}(-3,23 \mid 0)$	$P_{x_2}(2,89 \mid 0)$	$P_{x_{1/2}}\left(-\frac{1}{6} \pm \sqrt{\frac{337}{36}} \mid 0\right)$
121	$f(x) = \frac{5}{4}x^2 + \frac{9}{4}x - \frac{1}{2}$	$f(x) = \frac{5}{4}\left(x + \frac{9}{10}\right)^2 - \frac{121}{80}$	$S\left(-\frac{9}{10} \mid -\frac{121}{80}\right)$	$P_y\left(0 \mid -\frac{1}{2}\right)$	$P_{x_1}(-2 \mid 0)$	$P_{x_2}\left(\frac{1}{5} \mid 0\right)$	
122	$f(x) = -\frac{1}{4}x^2 + \frac{1}{4}x - 1$	$f(x) = -\frac{1}{4}\left(x - \frac{1}{2}\right)^2 - \frac{15}{16}$	$S\left(\frac{1}{2} \mid -\frac{15}{16}\right)$	$P_y(0 \mid -1)$			keine Nullstellen
123	$f(x) = -\frac{1}{4}x^2 - 2x + 3$	$f(x) = -\frac{1}{4}(x+4)^2 + 7$	$S(-4 \mid 7)$	$P_y(0 \mid 3)$	$P_{x_1}(-9,29 \mid 0)$	$P_{x_2}(1,29 \mid 0)$	$P_{x_{1/2}}(-4 \pm \sqrt{28} \mid 0)$
124	$f(x) = -\frac{3}{4}x^2 + \frac{2}{3}x - \frac{1}{6}$	$f(x) = -\frac{3}{4}\left(x - \frac{4}{9}\right)^2 - \frac{1}{54}$	$S\left(\frac{4}{9} \mid -\frac{1}{54}\right)$	$P_y\left(0 \mid -\frac{1}{6}\right)$			keine Nullstellen
125	$f(x) = -\frac{3}{4}x^2 + 2x + 3$	$f(x) = -\frac{3}{4}\left(x - \frac{4}{3}\right)^2 + \frac{13}{3}$	$S\left(\frac{4}{3} \mid \frac{13}{3}\right)$	$P_y(0 \mid 3)$	$P_{x_1}(-1,07 \mid 0)$	$P_{x_2}(3,74 \mid 0)$	$P_{x_{1/2}}\left(\frac{4}{3} \pm \sqrt{\frac{52}{9}} \mid 0\right)$
126	$f(x) = \frac{1}{3}x^2 + \frac{2}{3}x - \sqrt{12}$	$f(x) = \frac{1}{3}(x+1)^2 - \frac{1}{3} - \sqrt{12}$	$S\left(-1 \mid -\frac{1}{3} - \sqrt{12}\right)$	$P_y(0 \mid -\sqrt{12})$	$P_{x_1}(-4,38 \mid 0)$	$P_{x_2}(2,38 \mid 0)$	$P_{x_{1/2}}(-1 \pm \sqrt{1+3\sqrt{12}} \mid 0)$
127	$f(x) = \frac{1}{3}x^2 - \frac{2}{3}x - 2$	$f(x) = \frac{1}{3}(x-1)^2 - \frac{7}{3}$	$S\left(1 \mid -\frac{7}{3}\right)$	$P_y(0 \mid -2)$	$P_{x_1}(-1,65 \mid 0)$	$P_{x_2}(3,65 \mid 0)$	$P_{x_{1/2}}(1 \pm \sqrt{7} \mid 0)$
128	$f(x) = \frac{1}{3}x^2 - 2x + \frac{5}{3}$	$f(x) = \frac{1}{3}(x-3)^2 - \frac{4}{3}$	$S\left(3 \mid -\frac{4}{3}\right)$	$P_y\left(0 \mid \frac{5}{3}\right)$	$P_{x_1}(1 \mid 0)$	$P_{x_2}(5 \mid 0)$	
129	$f(x) = \frac{1}{3}x^2 - \frac{2}{3}x + \frac{5}{6}$	$f(x) = \frac{1}{3}(x-1)^2 + \frac{4}{3}$	$S\left(1 \mid \frac{4}{3}\right)$	$P_y\left(0 \mid \frac{5}{3}\right)$			keine Nullstellen



130	$f(x) = -\frac{1}{3}x^2 + \frac{2}{3}x + 2$	$f(x) = -\frac{1}{3}(x-1)^2 + \frac{7}{3}$	$S\left(1 \mid \frac{7}{3}\right)$	$P_y(0 \mid 2)$	$P_{x_1}(-1,65 \mid 0)$	$P_{x_2}(3,65 \mid 0)$	$P_{x_{1/2}}(1 \pm \sqrt{7} \mid 0)$
131	$f(x) = -\frac{1}{3}x^2 + 2x + \frac{5}{3}$	$f(x) = -\frac{1}{3}(x-3)^2 + \frac{14}{3}$	$S\left(3 \mid \frac{14}{3}\right)$	$P_y\left(0 \mid \frac{5}{3}\right)$	$P_{x_1}(-0,74 \mid 0)$	$P_{x_2}(6,74 \mid 0)$	$P_{x_{1/2}}(3 \pm \sqrt{14} \mid 0)$
132	$f(x) = \frac{2}{3}x^2 + 4x$	$f(x) = \frac{2}{3}(x+3)^2 - 6$	$S(-3 \mid -6)$	$P_y(0 \mid 0)$	$P_{x_1}(-6 \mid 0)$	$P_{x_2}(0 \mid 0)$	
133	$f(x) = \frac{2}{3}x^2 - 2x + \frac{5}{2}$	$f(x) = \frac{2}{3}\left(x - \frac{3}{2}\right)^2 + \frac{1}{6}$	$S\left(\frac{3}{2} \mid \frac{1}{6}\right)$	$P_y\left(0 \mid \frac{5}{3}\right)$			keine Nullstellen
134	$f(x) = \frac{4}{3}x^2 - 2x + \frac{5}{2}$	$f(x) = \frac{4}{3}\left(x - \frac{3}{4}\right)^2 + \frac{11}{12}$	$S\left(\frac{3}{4} \mid \frac{11}{12}\right)$	$P_y\left(0 \mid \frac{5}{3}\right)$			keine Nullstellen
135	$f(x) = -\frac{2}{3}x^2 + \frac{3}{4}x + 6$	$f(x) = -\frac{2}{3}\left(x - \frac{9}{16}\right)^2 + \frac{795}{128}$	$S\left(\frac{9}{16} \mid \frac{795}{128}\right)$	$P_y(0 \mid 6)$	$P_{x_1}(-2,49 \mid 0)$	$P_{x_2}(3,62 \mid 0)$	$P_{x_{1/2}}\left(\frac{9}{16} \pm \sqrt{\frac{2385}{256}} \mid 0\right)$
136	$f(x) = \frac{1}{5}x^2 + \frac{3}{5}x - \frac{7}{5}$	$f(x) = \frac{1}{5}\left(x + \frac{3}{2}\right)^2 - \frac{37}{20}$	$S\left(-\frac{3}{2} \mid -\frac{37}{20}\right)$	$P_y\left(0 \mid -\frac{7}{5}\right)$	$P_{x_1}(-4,54 \mid 0)$	$P_{x_2}(1,54 \mid 0)$	$P_{x_{1/2}}\left(-\frac{3}{2} \pm \sqrt{\frac{37}{4}} \mid 0\right)$
137	$f(x) = \frac{2}{5}x^2 - \frac{3}{5}x - \frac{4}{5}$	$f(x) = \frac{2}{5}\left(x - \frac{3}{4}\right)^2 - \frac{41}{40}$	$S\left(\frac{3}{4} \mid -\frac{41}{40}\right)$	$P_y\left(0 \mid -\frac{4}{5}\right)$	$P_{x_1}(-0,85 \mid 0)$	$P_{x_2}(2,35 \mid 0)$	$P_{x_{1/2}}\left(\frac{3}{4} \pm \sqrt{\frac{41}{16}} \mid 0\right)$
138	$f(x) = \frac{4}{5}x^2 + \frac{3}{4}x - \frac{7}{2}$	$f(x) = \frac{4}{5}\left(x + \frac{15}{32}\right)^2 - \frac{941}{256}$	$S\left(-\frac{15}{32} \mid -\frac{941}{256}\right)$	$P_y\left(0 \mid -\frac{7}{2}\right)$	$P_{x_1}(-2,61 \mid 0)$	$P_{x_2}(1,67 \mid 0)$	$P_{x_{1/2}}\left(-\frac{15}{32} \pm \sqrt{\frac{4705}{1024}} \mid 0\right)$
139	$f(x) = -\frac{4}{5}x^2 + \frac{3}{5}x + \frac{7}{5}$	$f(x) = -\frac{4}{5}\left(x - \frac{3}{8}\right)^2 + \frac{121}{80}$	$S\left(\frac{3}{8} \mid \frac{121}{80}\right)$	$P_y\left(0 \mid \frac{7}{5}\right)$	$P_{x_1}(-1 \mid 0)$	$P_{x_2}\left(\frac{7}{4} \mid 0\right)$	
140	$f(x) = 2x^2 + 4x$	$f(x) = 2(x+1)^2 - 2$	$S(-1 \mid -2)$	$P_y(0 \mid 0)$	$P_{x_1}(-2 \mid 0)$	$P_{x_2}(0 \mid 0)$	
141	$f(x) = 2x^2 - x$	$f(x) = 2\left(x - \frac{1}{4}\right)^2 - \frac{1}{8}$	$S\left(\frac{1}{4} \mid -\frac{1}{8}\right)$	$P_y(0 \mid 0)$	$P_{x_1}(0 \mid 0)$	$P_{x_2}\left(\frac{1}{2} \mid 0\right)$	
142	$f(x) = 2x^2 + 3x - 1$	$f(x) = 2\left(x + \frac{3}{4}\right)^2 - \frac{17}{8}$	$S\left(-\frac{3}{4} \mid -\frac{17}{8}\right)$	$P_y(0 \mid -1)$	$P_{x_1}(-1,78 \mid 0)$	$P_{x_2}(0,28 \mid 0)$	$P_{x_{1/2}}\left(-\frac{3}{4} \pm \sqrt{\frac{17}{16}} \mid 0\right)$
143	$f(x) = 2x^2 + 4x - 9$	$f(x) = 2(x+1)^2 - 11$	$S(-1 \mid -11)$	$P_y(0 \mid -9)$	$P_{x_1}(-3,35 \mid 0)$	$P_{x_2}(1,35 \mid 0)$	$P_{x_{1/2}}\left(-1 \pm \sqrt{\frac{11}{2}} \mid 0\right)$

144	$f(x) = 2x^2 - 4x - 1$	$f(x) = 2(x-1)^2 - 3$	$S(1 -3)$	$P_y(0 -1)$	$P_{x_1}(-0,23 0)$	$P_{x_2}(2,23 0)$	$P_{x_{1/2}}\left(1 \pm \sqrt{\frac{3}{2}} 0\right)$
145	$f(x) = 3x^2 - 1$	$f(x) = 3x^2 - 1$	$S(0 -1)$	$P_y(0 -1)$	$P_{x_1}(-0,58 0)$	$P_{x_2}(0,58 0)$	$P_{x_{1/2}}\left(\pm \sqrt{\frac{1}{3}} 0\right)$
146	$f(x) = 3x^2 - 14x + 7$	$f(x) = 3\left(x - \frac{7}{3}\right)^2 - \frac{28}{3}$	$S\left(\frac{7}{3}   -\frac{28}{3}\right)$	$P_y(0 7)$	$P_{x_1}(-0,57 0)$	$P_{x_2}(4,1 0)$	$P_{x_{1/2}}\left(\frac{7}{3} \pm \sqrt{\frac{28}{9}} 0\right)$
147	$f(x) = 3x^2 - 2x + 1$	$f(x) = 3\left(x - \frac{1}{3}\right)^2 + \frac{2}{3}$	$S\left(\frac{1}{3}   \frac{2}{3}\right)$	$P_y(0 1)$			keine Nullstelle
148	$f(x) = 4x^2 + x - 5$	$f(x) = 4\left(x + \frac{1}{8}\right)^2 - \frac{81}{16}$	$S\left(-\frac{1}{8}   -\frac{81}{16}\right)$	$P_y(0 -5)$	$P_{x_1}\left(-\frac{5}{4} 0\right)$	$P_{x_2}(1 0)$	
149	$f(x) = 5x^2 + 2x$	$f(x) = 5\left(x + \frac{1}{5}\right)^2 - \frac{1}{5}$	$S\left(-\frac{1}{5}   -\frac{1}{5}\right)$	$P_y(0 0)$	$P_{x_1}\left(-\frac{2}{5} 0\right)$	$P_{x_2}(0 0)$	
150	$f(x) = -2x^2 + 4x$	$f(x) = -2(x-1)^2 + 2$	$S(1 2)$	$P_y(0 0)$	$P_{x_1}(0 0)$	$P_{x_2}(2 0)$	
151	$f(x) = -2x^2 + x$	$f(x) = -2\left(x - \frac{1}{4}\right)^2 + \frac{1}{8}$	$S\left(\frac{1}{4}   \frac{1}{8}\right)$	$P_y(0 0)$	$P_{x_1}(0 0)$	$P_{x_2}\left(\frac{1}{2} 0\right)$	
152	$f(x) = -2x^2 - 3x + 1$	$f(x) = -2\left(x + \frac{3}{4}\right)^2 + \frac{17}{8}$	$S\left(-\frac{3}{4}   \frac{17}{8}\right)$	$P_y(0 1)$	$P_{x_1}(-1,79 0)$	$P_{x_2}(0,28 0)$	$P_{x_{1/2}}\left(-\frac{3}{4} \pm \sqrt{\frac{17}{16}} 0\right)$
153	$f(x) = -2x^2 - 5x + 2$	$f(x) = -2\left(x + \frac{5}{4}\right)^2 + \frac{41}{8}$	$S\left(-\frac{5}{4}   \frac{41}{8}\right)$	$P_y(0 2)$	$P_{x_1}(-2,85 0)$	$P_{x_2}(0,35 0)$	$P_{x_{1/2}}\left(-\frac{5}{4} \pm \sqrt{\frac{41}{16}} 0\right)$
154	$f(x) = -2x^2 - 4x + 9$	$f(x) = -2(x+1)^2 + 11$	$S(-1 11)$	$P_y(0 9)$	$P_{x_1}(-3,35 0)$	$P_{x_2}(1,35 0)$	$P_{x_{1/2}}\left(-1 \pm \sqrt{\frac{11}{2}} 0\right)$
155	$f(x) = -2x^2 - 4x + 1$	$f(x) = -2(x+1)^2 + 3$	$S(-1 3)$	$P_y(0 1)$	$P_{x_1}(-2,23 0)$	$P_{x_2}(0,23 0)$	$P_{x_{1/2}}\left(-1 \pm \sqrt{\frac{3}{2}} 0\right)$
156	$f(x) = -3x^2 + 1$	$f(x) = -3x^2 + 1$	$S(0 1)$	$P_y(0 1)$	$P_{x_1}(-0,58 0)$	$P_{x_2}(0,58 0)$	$P_{x_{1/2}}\left(\pm \sqrt{\frac{1}{3}} 0\right)$

157	$f(x) = -3x^2 + 14x - 7$	$f(x) = -3\left(x - \frac{7}{3}\right)^2 + \frac{28}{3}$	$S\left(\frac{7}{3} \mid \frac{28}{3}\right)$	$P_y(0 \mid -7)$	$P_{x_1}(0,57 \mid 0)$	$P_{x_2}(4,10 \mid 0)$	$P_{x_{1/2}}\left(\frac{7}{3} \pm \sqrt{\frac{28}{9}} \mid 0\right)$
158	$f(x) = -4x^2 + 9$	$f(x) = -4x^2 + 9$	$S(0 \mid 9)$	$P_y(0 \mid 9)$	$P_{x_1}\left(-\frac{3}{2} \mid 0\right)$	$P_{x_2}\left(\frac{3}{2} \mid 0\right)$	
159	$f(x) = -4x^2 - x + 5$	$f(x) = -4\left(x + \frac{1}{8}\right)^2 + \frac{81}{16}$	$S\left(-\frac{1}{8} \mid \frac{81}{16}\right)$	$P_y(0 \mid 5)$	$P_{x_1}\left(-\frac{5}{4} \mid 0\right)$	$P_{x_2}(1 \mid 0)$	
160	$f(x) = -4x^2 + x + 3$	$f(x) = -4\left(x - \frac{1}{8}\right)^2 + \frac{49}{16}$	$S\left(\frac{1}{8} \mid \frac{49}{16}\right)$	$P_y(0 \mid 3)$	$P_{x_1}\left(-\frac{3}{4} \mid 0\right)$	$P_{x_2}(1 \mid 0)$	

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