## Quadratische Funktionen

## Ganzzahlige Koeffizienten und Lösungen

| c itocii | izienten ana Losangen      |                             |                           |
|----------|----------------------------|-----------------------------|---------------------------|
| 01)      | $f(x) = -10x^2 - 20x + 30$ | $NST = \{-3; 1\}$           | $S(-1 \mid 40)$           |
| 02)      | $f(x) = -9x^2 + 18x + 27$  | $NST = \{-1; 3\}$           | $S(1 \mid 36)$            |
| 03)      | $f(x) = -6x^2 + 12x + 18$  | $NST = \{-1, 3\}$           | $S(1 \mid 24)$            |
| 04)      | $f(x) = -5x^2 - 30x - 25$  | $NST = \{-5; -1\}$          | $S(-3 \mid 20)$           |
| 05)      | $f(x) = -4x^2 + 24x - 20$  | $NST = \{1; 5\}$            | $S(3 \mid 16)$            |
| 06)      | $f(x) = -4x^2 + 24x - 32$  | $NST = \{2; 4\}$            | $S(3 \mid 4)$             |
| 07)      | $f(x) = -3x^2 + 12x$       | $NST = \{0; 4\}$            | $S(2 \mid 12)$            |
| 08)      | $f(x) = -3x^2 + 12x + 36$  | $NST = \{-2; 6\}$           | $S(2 \mid 48)$            |
| 09)      | $f(x) = -3x^2 + 24x - 36$  | $NST = \{2; 6\}$            | $S(4 \mid 12)$            |
| 10)      | $f(x) = -3x^2 - 6x - 3$    | $NST = \{-1\}$              | $S(-1 \mid 0)$            |
| 11)      | $f(x) = -3x^2 - 6x + 45$   | $NST = \{-5; 3\}$           | $S\left(-1\mid 48\right)$ |
| 12)      | $f(x) = -3x^2 + 6x + 9$    | $NST = \{-1; 3\}$           | $S(1 \mid 12)$            |
| 13)      | $f(x) = -2x^2 - 12x - 10$  | $NST = \{-5; -1\}$          | $S(-3 \mid 8)$            |
| 14)      | $f(x) = -2x^2 + 12x + 32$  | $NST = \{-2; 8\}$           | $S\left(3\mid 50\right)$  |
| 15)      | $f(x) = -2x^2 + 16x - 14$  | $\mathrm{NST} = \{1;7\}$    | $S(4 \mid 18)$            |
| 16)      | $f(x) = -2x^2 + 16x + 18$  | $\mathrm{NST} = \{-1; 9\}$  | $S(4 \mid 50)$            |
| 17)      | $f(x) = -2x^2 - 20x - 42$  | $NST = \{-7; -3\}$          | $S(-5 \mid 8)$            |
| 18)      | $f(x) = -2x^2 - 20x - 50$  | $NST = \{-5\}$              | $S(-5 \mid 0)$            |
| 19)      | $f(x) = -2x^2 + 8x + 10$   | $\mathrm{NST} = \{-1; 5\}$  | $S(2 \mid 18)$            |
| 20)      | $f(x) = -x^2 + 10x + 11$   | $\mathrm{NST} = \{-1; 11\}$ | $S(5 \mid 36)$            |
| 21)      | $f(x) = -x^2 + 10x - 21$   | $NST = \{3; 7\}$            | $S(5 \mid 4)$             |
| 22)      | $f(x) = -x^2 - 10x - 24$   | $NST = \{-6; -4\}$          | $S(-5 \mid 1)$            |
| 23)      | $f(x) = -x^2 - 12x + 13$   | $NST = \{-13; 1\}$          | $S(-6 \mid 49)$           |
| 24)      | $f(x) = -x^2 + 12x - 35$   | $NST = \{5; 7\}$            | $S(6 \mid 1)$             |
| 25)      | $f(x) = -x^2 - 14x - 48$   | $NST = \{-8; -6\}$          | $S(-7 \mid 1)$            |
| 26)      | $f(x) = -x^2 - 14x - 49$   | $NST = \{-7\}$              | $S(-7\mid 0)$             |
| 27)      | $f(x) = -x^2 - 16x - 48$   | $NST = \{-12; -4\}$         | S(-8   16)                |
| 28)      | $f(x) = -x^2 + 2x + 24$    | $NST = \{-4; 6\}$           | $S(1 \mid 25)$            |
| 29)      | $f(x) = -x^2 + 2x + 35$    | $NST = \{-5, 7\}$           | $S(1 \mid 36)$            |
| 30)      | $f(x) = -x^2 - 4x + 5$     | $NST = \{-5; 1\}$           | $S(-2 \mid 9)$            |
|          |                            |                             |                           |

31) 
$$f(x) = -x^2 + 6x + 16$$
 NST =  $\{-2, 8\}$   $S(3 \mid 25)$ 

32) 
$$f(x) = -x^2 + 6x + 27$$
 NST =  $\{-3, 9\}$   $S(3 \mid 36)$ 

33) 
$$f(x) = -x^2 - 6x - 8$$
  $NST = \{-4, -2\}$   $S(-3 \mid 1)$ 

34) 
$$f(x) = -x^2 + 8x + 33$$
 NST =  $\{-3, 11\}$   $S(4 \mid 49)$ 

35) 
$$f(x) = x^2 - 10x + 24$$
 NST =  $\{4, 6\}$   $S(5 \mid -1)$ 

36) 
$$f(x) = x^2 - 12x + 20$$
 NST =  $\{2; 10\}$   $S(6 \mid -16)$ 

37) 
$$f(x) = x^2 + 12x + 35$$
 NST =  $\{-7, -5\}$   $S(-6 \mid -1)$ 

38) 
$$f(x) = x^2 + 14x$$
  $NST = \{-14, 0\}$   $S(-7 \mid -49)$ 

39) 
$$f(x) = x^2 - 14x + 33$$
 NST =  $\{3; 11\}$   $S(7 \mid -16)$ 

40) 
$$f(x) = x^2 + 2x - 3$$
 NST =  $\{-3, 1\}$   $S(-1 \mid -4)$ 

41) 
$$f(x) = x^2 - 6x$$
 NST =  $\{0, 6\}$   $S(3 \mid -9)$ 

42) 
$$f(x) = x^2 + 8x - 20$$
 NST =  $\{-10, 2\}$   $S(-4 \mid -36)$ 

43) 
$$f(x) = x^2 - 8x - 20$$
 NST =  $\{-2, 10\}$   $S(4 \mid -36)$ 

44) 
$$f(x) = x^2 + 8x + 7$$
  $NST = \{-7, -1\}$   $S(-4 \mid -9)$ 

45) 
$$f(x) = x^2 - 8x + 7$$
 NST =  $\{1, 7\}$   $S(4 \mid -9)$ 

46) 
$$f(x) = x^2 - 8x - 9$$
 NST =  $\{-1, 9\}$   $S(4 \mid -25)$ 

47) 
$$f(x) = 2x^2 - 12x - 14$$
 NST =  $\{-1, 7\}$   $S(3 \mid -32)$ 

48) 
$$f(x) = 2x^2 - 12x - 32$$
 NST =  $\{-2, 8\}$   $S(3 \mid -50)$ 

49) 
$$f(x) = 2x^2 - 16x$$
  $NST = \{0, 8\}$   $S(4 \mid -32)$ 

50) 
$$f(x) = 2x^2 + 20x + 48$$
  $NST = \{-6, -4\}$   $S(-5 \mid -2)$ 

51) 
$$f(x) = 2x^2 - 4x + 2$$
 NST = {1} S(1 | 0)

52) 
$$f(x) = 2x^2 + 8x - 24$$
 NST =  $\{-6, 2\}$   $S(-2 \mid -32)$ 

53) 
$$f(x) = 3x^2 - 18x + 24$$
 NST =  $\{2; 4\}$   $S(3 \mid -3)$ 

54) 
$$f(x) = 3x^2 - 24x + 48$$
 NST = {4} S(4 | 0)

55) 
$$f(x) = 4x^2 - 16x + 12$$
 NST =  $\{1; 3\}$   $S(2 \mid -4)$ 

56) 
$$f(x) = 4x^2 - 16x - 20$$
 NST =  $\{-1, 5\}$   $S(2 \mid -36)$ 

57) 
$$f(x) = 5x^2 - 10x - 15$$
 NST =  $\{-1, 3\}$   $S(1 \mid -20)$ 

58) 
$$f(x) = 5x^2 + 30x + 25$$
  $NST = \{-5, -1\}$   $S(-3 \mid -20)$ 

59) 
$$f(x) = 6x^2 - 12x - 18$$
 NST =  $\{-1, 3\}$   $S(1 \mid -24)$ 

60) 
$$f(x) = 7x^2 + 14x$$
  $NST = \{-2, 0\}$   $S(-1 \mid -7)$ 

61) 
$$f(x) = 9x^2 + 36x$$
  $NST = \{-4, 0\}$   $S(-2 \mid -36)$ 

62) 
$$f(x) = 10x^2 + 40x + 30$$
  $NST = \{-3, -1\}$   $S(-2 \mid -10)$ 

63) 
$$f(x) = 10x^2 + 40x + 40$$
  $NST = \{-2\}$   $S(-2 \mid 0)$ 

## Rationale Koeffizienten und Lösungen

01) 
$$f(x) = -\frac{39}{8}x^2 + 13x - \frac{13}{2}$$
 NST =  $\left\{\frac{2}{3}; 2\right\}$   $S\left(\frac{4}{3} \mid \frac{13}{6}\right)$ 

02) 
$$f(x) = -\frac{32}{3}x^2 - \frac{32}{9}x + \frac{64}{27}$$
  $ST = \left\{-\frac{2}{3}; \frac{1}{3}\right\}$   $S\left(-\frac{1}{6} \mid \frac{8}{3}\right)$ 

03) 
$$f(x) = -\frac{25}{4}x^2 - 15x - \frac{35}{4}$$
 NST =  $\left\{-\frac{7}{5}; -1\right\}$   $S\left(-\frac{6}{5} \mid \frac{1}{4}\right)$ 

04) 
$$f(x) = -\frac{19}{4}x^2 - \frac{38}{3}x - \frac{19}{3}$$
 NST =  $\left\{-2; -\frac{2}{3}\right\}$   $S\left(-\frac{4}{3} \mid \frac{19}{9}\right)$ 

05) 
$$f(x) = -\frac{9}{16}x^2 - \frac{9}{8}x + \frac{27}{16}$$
  $S(-1 \mid \frac{9}{4})$ 

06) 
$$f(x) = -\frac{9}{4}x^2 + 6x - 3$$
 NST =  $\left\{\frac{2}{3}; 2\right\}$ 

07) 
$$f(x) = -\frac{9}{5}x^2 + \frac{72}{5}x - 27$$
 NST =  $\{3, 5\}$ 

08) 
$$f(x) = -\frac{9}{8}x^2 + \frac{3}{2}x + \frac{3}{2}$$
  $S\left(\frac{2}{3} \mid 2\right)$ 

09) 
$$f(x) = -\frac{9}{8}x^2 - 6x - \frac{15}{2}$$
 NST =  $\left\{-\frac{10}{3}; -2\right\}$   $S\left(-\frac{8}{3} \mid \frac{1}{2}\right)$ 

10) 
$$f(x) = -\frac{8}{5}x^2 + \frac{36}{5}x - \frac{13}{2}$$
 NST =  $\left\{\frac{5}{4}; \frac{13}{4}\right\}$   $S\left(\frac{9}{4} \mid \frac{8}{5}\right)$ 

11) 
$$f(x) = -\frac{7}{4}x^2 + \frac{7}{2}x + \frac{21}{4}$$
 NST =  $\{-1, 3\}$   $S(1 \mid 7)$ 

12) 
$$f(x) = -\frac{5}{12}x^2 + \frac{5}{6}x + \frac{5}{4}$$
 NST =  $\{-1, 3\}$ 

13) 
$$f(x) = -\frac{5}{2}x^2 - 10x$$
 NST =  $\{-4; 0\}$   $S(-2 \mid 10)$ 

14) 
$$f(x) = -\frac{5}{7}x^2 - \frac{18}{7}x - \frac{32}{35}$$
  $NST = \left\{-\frac{16}{5}; -\frac{2}{5}\right\}$   $S\left(-\frac{9}{5} \mid \frac{7}{5}\right)$ 

15) 
$$f(x) = -\frac{4}{5}x^2 + \frac{12}{5}x + \frac{16}{5}$$
 NST =  $\{-1, 4\}$ 

16) 
$$f(x) = -3x^2 + 15x - \frac{63}{4}$$
 NST =  $\left\{ \frac{3}{2}; \frac{7}{2} \right\}$   $S\left(\frac{5}{2} \mid 3\right)$ 

17) 
$$f(x) = -\frac{3}{16}x^2 - \frac{7}{8}x - \frac{11}{16}$$
  $\operatorname{NST} = \left\{ -\frac{11}{3}; -1 \right\}$   $S\left( -\frac{7}{3} \mid \frac{1}{3} \right)$ 

18) 
$$f(x) = -\frac{3}{2}x^2 - 6x - \frac{45}{8}$$
 NST =  $\left\{-\frac{5}{2}; -\frac{3}{2}\right\}$   $S\left(-2 \mid \frac{3}{8}\right)$ 

19) 
$$f(x) = -\frac{3}{4}x^2 + \frac{11}{2}x - \frac{39}{4}$$
 NST =  $\left\{3; \frac{13}{3}\right\}$   $S\left(\frac{11}{3} \mid \frac{1}{3}\right)$ 

20) 
$$f(x) = -2x^2 + 3x - 1$$
 NST =  $\left\{\frac{1}{2}; 1\right\}$   $S\left(\frac{3}{4} \mid \frac{1}{8}\right)$ 

21) 
$$f(x) = -2x^2 - 9x - \frac{45}{8}$$
 NST =  $\left\{-\frac{15}{4}; -\frac{3}{4}\right\}$   $S\left(-\frac{9}{4} \mid \frac{9}{2}\right)$ 

22) 
$$f(x) = -\frac{1}{12}x^2 - \frac{1}{3}x + \frac{5}{12}$$
 NST =  $\{-5; 1\}$   $S\left(-2 \mid \frac{3}{4}\right)$ 

23) 
$$f(x) = -\frac{1}{2}x^2 + \frac{9}{2}$$
 NST =  $\{-3, 3\}$ 

24) 
$$f(x) = -\frac{1}{2}x^2 + x + \frac{15}{2}$$
 NST =  $\{-3; 5\}$   $S(1 \mid 8)$ 

25) 
$$f(x) = -\frac{1}{2}x^2 - x + \frac{15}{2}$$
 NST =  $\{-5, 3\}$   $S(-1 \mid 8)$ 

26) 
$$f(x) = -\frac{1}{2}x^2 - \frac{1}{2}x + 1$$
 NST =  $\{-2; 1\}$   $S\left(-\frac{1}{2} \mid \frac{9}{8}\right)$ 

27) 
$$f(x) = -\frac{1}{2}x^2 - \frac{1}{2}x + \frac{3}{8}$$
  $S\left(-\frac{1}{2} \mid \frac{1}{2}\right)$ 

28) 
$$f(x) = -\frac{1}{2}x^2 - \frac{4}{3}x - \frac{2}{3}$$
 NST =  $\left\{-2; -\frac{2}{3}\right\}$   $S\left(-\frac{4}{3} \mid \frac{2}{9}\right)$ 

29) 
$$f(x) = -\frac{1}{4}x^2 - \frac{1}{2}x + \frac{15}{4}$$
 NST =  $\{-5, 3\}$ 

30) 
$$f(x) = -\frac{1}{4}x^2 - \frac{5}{6}x + \frac{25}{12}$$
  $S\left(-\frac{5}{3} \mid \frac{25}{9}\right)$ 

31) 
$$f(x) = -\frac{1}{4}x^2 - \frac{9}{4}x - 5$$
 NST =  $\{-5; -4\}$   $S\left(-\frac{9}{2} \mid \frac{1}{16}\right)$ 

32) 
$$f(x) = -x^2 - 5x - \frac{21}{4}$$
  $S(-\frac{5}{2} \mid 1)$ 

33) 
$$f(x) = -x^2 + \frac{5}{2}x - \frac{3}{2}$$
 NST =  $\left\{1; \frac{3}{2}\right\}$ 

34) 
$$f(x) = -\frac{1}{6}x^2 - \frac{7}{15}x + \frac{88}{75}$$
 NST =  $\left\{-\frac{22}{5}; \frac{8}{5}\right\}$   $S\left(-\frac{7}{5} \mid \frac{3}{2}\right)$ 

35) 
$$f(x) = -x^2 - 7x - \frac{45}{4}$$
  $ST = \left\{-\frac{9}{2}; -\frac{5}{2}\right\}$   $S\left(-\frac{7}{2} \mid 1\right)$ 

36) 
$$f(x) = -x^2 - 9x - 20$$
 NST =  $\{-5, -4\}$   $S\left(-\frac{9}{2} \mid \frac{1}{4}\right)$ 

37) 
$$f(x) = x^2 - \frac{11}{2}x + 7$$
 NST =  $\left\{2; \frac{7}{2}\right\}$   $S\left(\frac{11}{4} \middle| -\frac{9}{16}\right)$ 

38) 
$$f(x) = x^2 - \frac{14}{3}x + \frac{40}{9}$$
 NST =  $\left\{\frac{4}{3}; \frac{10}{3}\right\}$   $S\left(\frac{7}{3} - 1\right)$ 

39) 
$$f(x) = \frac{1}{2}x^2 + 2x - \frac{9}{8}$$
 NST =  $\left\{-\frac{9}{2}; \frac{1}{2}\right\}$   $S\left(-2 \left| -\frac{25}{8}\right)\right|$ 

40) 
$$f(x) = x^2 + 2x + \frac{3}{4}$$
 NST =  $\left\{-\frac{3}{2}; -\frac{1}{2}\right\}$   $S\left(-1 \left| -\frac{1}{4}\right)\right|$ 

41) 
$$f(x) = \frac{1}{2}x^2 + \frac{3}{4}x + \frac{1}{4}$$
 NST =  $\left\{-1; -\frac{1}{2}\right\}$   $S\left(-\frac{3}{4} \left| -\frac{1}{32}\right)\right\}$ 

42) 
$$f(x) = \frac{1}{4}x^2 - \frac{1}{4}$$
 NST =  $\{-1; 1\}$   $S\left(0 \mid -\frac{1}{4}\right)$ 

43) 
$$f(x) = \frac{1}{4}x^2 - \frac{1}{2}x - \frac{3}{4}$$
 NST =  $\{-1, 3\}$ 

44) 
$$f(x) = x^2 - 7x + 12$$
 NST =  $\{3; 4\}$   $S\left(\frac{7}{2} \left| -\frac{1}{4}\right)\right)$ 

45) 
$$f(x) = x^2 + 7x + \frac{45}{4}$$
  $ST = \left\{-\frac{9}{2}; -\frac{5}{2}\right\}$   $S\left(-\frac{7}{2} \mid -1\right)$ 

46) 
$$f(x) = \frac{1}{9}x^2 + \frac{5}{9}x + \frac{4}{9}$$
  $ST = \{-4; -1\}$   $S\left(-\frac{5}{2} \mid -\frac{1}{4}\right)$ 

47) 
$$f(x) = 2x^2 + 8x + \frac{15}{2}$$
 NST =  $\left\{-\frac{5}{2}; -\frac{3}{2}\right\}$   $S\left(-2 \left| -\frac{1}{2}\right)\right|$ 

48) 
$$f(x) = \frac{3}{16}x^2 + \frac{5}{4}x + \frac{7}{4}$$
  $S(-\frac{14}{3}; -2)$   $S(-\frac{10}{3}|-\frac{1}{3})$ 

49) 
$$f(x) = \frac{3}{2}x^2 - \frac{9}{2}x$$
 NST =  $\{0; 3\}$ 

50) 
$$f(x) = \frac{3}{4}x^2 + \frac{9}{2}x + 6$$
 NST =  $\{-4; -2\}$   $S\left(-3 \mid -\frac{3}{4}\right)$ 

51) 
$$f(x) = \frac{4}{9}x^2 - \frac{2}{3}x - \frac{3}{4}$$
  $S\left(\frac{3}{4} - 1\right)$ 

52) 
$$f(x) = 5x^2 + 6x - \frac{7}{5}$$
  $S\left(-\frac{3}{5} \left| -\frac{16}{5} \right| \right)$ 

53) 
$$f(x) = \frac{5}{8}x^2 - \frac{25}{8}x + \frac{45}{32}$$
  $S\left(\frac{5}{2} - \frac{5}{2}\right)$ 

54) 
$$f(x) = \frac{7}{4}x^2 - \frac{7}{2}x + \frac{21}{16}$$
  $S\left(1 \mid -\frac{7}{16}\right)$ 

55) 
$$f(x) = \frac{8}{15}x^2 + \frac{8}{3}x + \frac{32}{15}$$
  $S\left(-\frac{5}{2} - \frac{6}{5}\right)$ 

56) 
$$f(x) = 8x^2 + 16x + 6$$
  $S(-1 \mid -2)$ 

57) 
$$f(x) = \frac{9}{10}x^2 + \frac{12}{5}x + \frac{6}{5}$$
 NST =  $\left\{-2; -\frac{2}{3}\right\}$   $S\left(-\frac{4}{3} \mid -\frac{2}{5}\right)$ 

58) 
$$f(x) = \frac{9}{20}x^2 - \frac{3}{5}x - \frac{24}{5}$$
 NST =  $\left\{-\frac{8}{3}; 4\right\}$ 

59) 
$$f(x) = \frac{11}{4}x^2 - 11x + \frac{33}{4}$$
 NST =  $\{1, 3\}$ 

60) 
$$f(x) = \frac{16}{15}x^2 - \frac{28}{5}x + \frac{18}{5}$$
  $S\left(\frac{21}{8} \left| -\frac{15}{4}\right)\right|$ 

61) 
$$f(x) = \frac{21}{25}x^2 + \frac{28}{5}x + 7$$
 NST =  $\left\{-5; -\frac{5}{3}\right\}$   $S\left(-\frac{10}{3} \mid -\frac{7}{3}\right)$ 

62) 
$$f(x) = \frac{25}{6}x^2 - \frac{5}{3}x - \frac{1}{2}$$
  $S\left(\frac{1}{5} - \frac{2}{3}\right)$ 

## Irrationale Koeffizienten und Lösungen

$$01) f(x) = \sqrt{7}x^2 + \sqrt{112}x + \sqrt{63}$$

$$NST = \{-3; -1\}$$

$$S\left(-2 \mid -\sqrt{7}\right)$$

$$(02) f(x) = -x^2 - \sqrt{\frac{3}{4}}x + \frac{3}{2}$$

$$NST = \left\{ -\sqrt{3}; \sqrt{\frac{3}{4}} \right\}$$

$$S\left(-\sqrt{\frac{3}{16}} \mid \frac{27}{16}\right)$$

$$(3) f(x) = \sqrt{3}x^2 + 4x + \sqrt{3}$$

$$NST = \left\{ -\sqrt{3}; -\sqrt{\frac{1}{3}} \right\}$$

$$S\left(-\sqrt{\frac{4}{3}}\;\middle|\; -\sqrt{\frac{1}{3}}\right)$$

$$(04) f(x) = \sqrt{108}x^2 - 30x + \sqrt{432}$$

$$NST = \left\{ \sqrt{\frac{4}{3}}; \sqrt{3} \right\}$$

$$S\left(\sqrt{\frac{25}{12}} \mid -\sqrt{\frac{3}{4}}\right)$$

$$(5) f(x) = -\sqrt{\frac{11}{128}}x^2 + \sqrt{22}x - \sqrt{198}$$

$$NST = \{4; 12\}$$

$$S\left(8 \mid \sqrt{22}\right)$$

06) 
$$f(x) = -\sqrt{\frac{1}{54}}x^2 + \sqrt{\frac{2}{3}}x + \sqrt{\frac{27}{2}}$$

$$NST = \{-3; 9\}$$

$$S\left(3\mid\sqrt{24}\right)$$

07) 
$$f(x) = \sqrt{\frac{1}{162}}x^2 + \sqrt{\frac{2}{9}}x - \sqrt{\frac{9}{2}}$$

$$NST = \{-9; 3\}$$

$$S\left(-3 \mid -\sqrt{8}\right)$$

$$(68) f(x) = -\sqrt{\frac{16}{27}}x^2 + \sqrt{\frac{16}{27}}x + \sqrt{\frac{64}{27}}$$

$$\mathrm{NST} = \{-1; 2\}$$

$$S\left(\frac{1}{2} \mid \sqrt{3}\right)$$

$$(9) f(x) = -\sqrt{\frac{1}{108}}x^2 - \sqrt{3}x - \sqrt{\frac{75}{4}}$$

$$NST = \{-15; -3\}$$

$$S\left(-9 \mid \sqrt{12}\right)$$

10) 
$$f(x) = \sqrt{\frac{2}{9}}x^2 - \sqrt{8}x + \sqrt{\frac{128}{9}}$$

$$NST = \{2; 4\}$$

$$S\left(3\left|-\sqrt{\frac{2}{9}}\right)\right|$$

11) 
$$f(x) = -\sqrt{\frac{1}{3}}x^2 - \sqrt{\frac{1}{3}}x + \sqrt{\frac{75}{16}}$$

$$NST = \left\{ -\frac{5}{2}; \frac{3}{2} \right\}$$

$$S\left(-\frac{1}{2} \mid \sqrt{\frac{16}{3}}\right)$$

12) 
$$f(x) = \sqrt{\frac{81}{5}}x^2 - \sqrt{\frac{36}{5}}x - \sqrt{\frac{9}{5}}$$

$$NST = \left\{ -\frac{1}{3}; 1 \right\}$$

$$S\left(\frac{1}{3} \mid -\sqrt{\frac{16}{5}}\right)$$

13) 
$$f(x) = -\sqrt{\frac{8}{625}}x^2 + \sqrt{\frac{72}{25}}x - \sqrt{\frac{25}{2}}$$

$$NST = \left\{ \frac{5}{2}; \frac{25}{2} \right\}$$

$$S\left(\frac{15}{2} \mid \sqrt{8}\right)$$

14) 
$$f(x) = -\sqrt{\frac{32}{9}}x^2 + \sqrt{\frac{128}{3}}x - \sqrt{18}$$

$$NST = \left\{ \sqrt{\frac{3}{4}}; \sqrt{\frac{27}{4}} \right\}$$

$$S\left(\sqrt{3}\mid\sqrt{2}\right)$$

15) 
$$f(x) = -\sqrt{\frac{13}{6}}x^2 + \sqrt{\frac{13}{9}}x + \sqrt{\frac{104}{27}}$$

$$NST = \left\{ -\sqrt{\frac{2}{3}}; \sqrt{\frac{8}{3}} \right\}$$

$$S\left(\sqrt{\frac{1}{6}} \mid \sqrt{\frac{39}{8}}\right)$$

16) 
$$f(x) = \sqrt{\frac{56}{9}}x^2 + \sqrt{\frac{448}{9}}x + \sqrt{14}$$

$$NST = \left\{ -\sqrt{\frac{9}{2}}; -\sqrt{\frac{1}{2}} \right\}$$

$$S\left(-\sqrt{2} \mid -\sqrt{\frac{14}{9}}\right)$$

17) 
$$f(x) = -\sqrt{\frac{171}{16}}x^2 - \sqrt{114}x - \sqrt{\frac{171}{4}}$$

$$NST = \left\{ -\sqrt{6}; -\sqrt{\frac{2}{3}} \right\}$$

$$S\left(-\sqrt{\frac{8}{3}} \mid \sqrt{\frac{19}{4}}\right)$$