Satz von Vieta

Stufe 1: Gleichung aus den Lösungen aufstellen

Name: _____ Datum: _____

Satz von Vieta für $x^2 + px + q = 0$: $x1 + x2 = -p$ und $x1 \cdot x2 = q$.

1) $x_1 = -4,\ x_2 = 1$ _____

2) $x_1 = -5,\ x_2 = 3$ _____

3) $x_1 = -4,\ x_2 = 0$ _____

4) $x_1 = -3,\ x_2 = 0$ _____

5) $x_1 = -7,\ x_2 = -3$ _____

6) $x_1 = 0,\ x_2 = 8$ _____

7) $x_1 = -1,\ x_2 = 2$ _____

8) $x_1 = -9,\ x_2 = 1$ _____

9) $x_1 = -8,\ x_2 = -6$ _____

10) $x_1 = -8,\ x_2 = -7$ _____

11) $x_1 = 8,\ x_2 = 9$ _____

12) $x_1 = -3,\ x_2 = 3$ _____

13) $x_1 = -8,\ x_2 = 9$ _____

14) $x_1 = 6,\ x_2 = 9$ _____

15) $x_1 = -7,\ x_2 = 3$ _____

16) $x_1 = -9,\ x_2 = 9$ _____

17) $x_1 = 5,\ x_2 = 6$ _____

18) $x_1 = -4,\ x_2 = 7$ _____

19) $x_1 = -8,\ x_2 = 5$ _____

20) $x_1 = -6,\ x_2 = 1$ _____

21) $x_1 = 1,\ x_2 = 2$ _____

22) $x_1 = -8,\ x_2 = -2$ _____

23) $x_1 = 1,\ x_2 = 4$ _____

24) $x_1 = -6,\ x_2 = 8$ _____

25) $x_1 = -2,\ x_2 = 1$ _____

26) $x_1 = 1,\ x_2 = 7$ _____

27) $x_1 = -9,\ x_2 = -7$ _____

28) $x_1 = -7,\ x_2 = 7$ _____

29) $x_1 = -6,\ x_2 = -1$ _____

30) $x_1 = 4,\ x_2 = 8$ _____

31) $x_1 = -6,\ x_2 = 2$ _____

32) $x_1 = 0,\ x_2 = 3$ _____

33) $x_1 = -1,\ x_2 = 3$ _____

34) $x_1 = -7,\ x_2 = 0$ _____

35) $x_1 = -8,\ x_2 = 2$ _____

36) $x_1 = -7,\ x_2 = -6$ _____

Lösungen: Satz von Vieta

Stufe 1: Gleichung aus den Lösungen aufstellen

1) $x_1 = -4,\ x_2 = 1:\quad p = -(-4 + 1) = 3,\ q = -4 \quad\Rightarrow\quad x^2 + 3x - 4 = 0$

2) $x_1 = -5,\ x_2 = 3:\quad p = -(-5 + 3) = 2,\ q = -15 \quad\Rightarrow\quad x^2 + 2x - 15 = 0$

3) $x_1 = -4,\ x_2 = 0:\quad p = -(-4 + 0) = 4,\ q = 0 \quad\Rightarrow\quad x^2 + 4x = 0$

4) $x_1 = -3,\ x_2 = 0:\quad p = -(-3 + 0) = 3,\ q = 0 \quad\Rightarrow\quad x^2 + 3x = 0$

5) $x_1 = -7,\ x_2 = -3:\quad p = -(-7 + (-3)) = 10,\ q = 21 \quad\Rightarrow\quad x^2 + 10x + 21 = 0$

6) $x_1 = 0,\ x_2 = 8:\quad p = -(0 + 8) = -8,\ q = 0 \quad\Rightarrow\quad x^2 - 8x = 0$

7) $x_1 = -1,\ x_2 = 2:\quad p = -(-1 + 2) = -1,\ q = -2 \quad\Rightarrow\quad x^2 - x - 2 = 0$

8) $x_1 = -9,\ x_2 = 1:\quad p = -(-9 + 1) = 8,\ q = -9 \quad\Rightarrow\quad x^2 + 8x - 9 = 0$

9) $x_1 = -8,\ x_2 = -6:\quad p = -(-8 + (-6)) = 14,\ q = 48 \quad\Rightarrow\quad x^2 + 14x + 48 = 0$

10) $x_1 = -8,\ x_2 = -7:\quad p = -(-8 + (-7)) = 15,\ q = 56 \quad\Rightarrow\quad x^2 + 15x + 56 = 0$

11) $x_1 = 8,\ x_2 = 9:\quad p = -(8 + 9) = -17,\ q = 72 \quad\Rightarrow\quad x^2 - 17x + 72 = 0$

12) $x_1 = -3,\ x_2 = 3:\quad p = -(-3 + 3) = 0,\ q = -9 \quad\Rightarrow\quad x^2 - 9 = 0$

13) $x_1 = -8,\ x_2 = 9:\quad p = -(-8 + 9) = -1,\ q = -72 \quad\Rightarrow\quad x^2 - x - 72 = 0$

14) $x_1 = 6,\ x_2 = 9:\quad p = -(6 + 9) = -15,\ q = 54 \quad\Rightarrow\quad x^2 - 15x + 54 = 0$

15) $x_1 = -7,\ x_2 = 3:\quad p = -(-7 + 3) = 4,\ q = -21 \quad\Rightarrow\quad x^2 + 4x - 21 = 0$

16) $x_1 = -9,\ x_2 = 9:\quad p = -(-9 + 9) = 0,\ q = -81 \quad\Rightarrow\quad x^2 - 81 = 0$

17) $x_1 = 5,\ x_2 = 6:\quad p = -(5 + 6) = -11,\ q = 30 \quad\Rightarrow\quad x^2 - 11x + 30 = 0$

18) $x_1 = -4,\ x_2 = 7:\quad p = -(-4 + 7) = -3,\ q = -28 \quad\Rightarrow\quad x^2 - 3x - 28 = 0$

19) $x_1 = -8,\ x_2 = 5:\quad p = -(-8 + 5) = 3,\ q = -40 \quad\Rightarrow\quad x^2 + 3x - 40 = 0$

20) $x_1 = -6,\ x_2 = 1:\quad p = -(-6 + 1) = 5,\ q = -6 \quad\Rightarrow\quad x^2 + 5x - 6 = 0$

21) $x_1 = 1,\ x_2 = 2:\quad p = -(1 + 2) = -3,\ q = 2 \quad\Rightarrow\quad x^2 - 3x + 2 = 0$

22) $x_1 = -8,\ x_2 = -2:\quad p = -(-8 + (-2)) = 10,\ q = 16 \quad\Rightarrow\quad x^2 + 10x + 16 = 0$

23) $x_1 = 1,\ x_2 = 4:\quad p = -(1 + 4) = -5,\ q = 4 \quad\Rightarrow\quad x^2 - 5x + 4 = 0$

24) $x_1 = -6,\ x_2 = 8:\quad p = -(-6 + 8) = -2,\ q = -48 \quad\Rightarrow\quad x^2 - 2x - 48 = 0$

25) $x_1 = -2,\ x_2 = 1:\quad p = -(-2 + 1) = 1,\ q = -2 \quad\Rightarrow\quad x^2 + x - 2 = 0$

26) $x_1 = 1,\ x_2 = 7:\quad p = -(1 + 7) = -8,\ q = 7 \quad\Rightarrow\quad x^2 - 8x + 7 = 0$

27) $x_1 = -9,\ x_2 = -7:\quad p = -(-9 + (-7)) = 16,\ q = 63 \quad\Rightarrow\quad x^2 + 16x + 63 = 0$

28) $x_1 = -7,\ x_2 = 7:\quad p = -(-7 + 7) = 0,\ q = -49 \quad\Rightarrow\quad x^2 - 49 = 0$

29) $x_1 = -6,\ x_2 = -1:\quad p = -(-6 + (-1)) = 7,\ q = 6 \quad\Rightarrow\quad x^2 + 7x + 6 = 0$

30) $x_1 = 4,\ x_2 = 8:\quad p = -(4 + 8) = -12,\ q = 32 \quad\Rightarrow\quad x^2 - 12x + 32 = 0$

31) $x_1 = -6,\ x_2 = 2:\quad p = -(-6 + 2) = 4,\ q = -12 \quad\Rightarrow\quad x^2 + 4x - 12 = 0$

32) $x_1 = 0,\ x_2 = 3:\quad p = -(0 + 3) = -3,\ q = 0 \quad\Rightarrow\quad x^2 - 3x = 0$

33) $x_1 = -1,\ x_2 = 3:\quad p = -(-1 + 3) = -2,\ q = -3 \quad\Rightarrow\quad x^2 - 2x - 3 = 0$

34) $x_1 = -7,\ x_2 = 0:\quad p = -(-7 + 0) = 7,\ q = 0 \quad\Rightarrow\quad x^2 + 7x = 0$

35) $x_1 = -8,\ x_2 = 2:\quad p = -(-8 + 2) = 6,\ q = -16 \quad\Rightarrow\quad x^2 + 6x - 16 = 0$

36) $x_1 = -7,\ x_2 = -6:\quad p = -(-7 + (-6)) = 13,\ q = 42 \quad\Rightarrow\quad x^2 + 13x + 42 = 0$