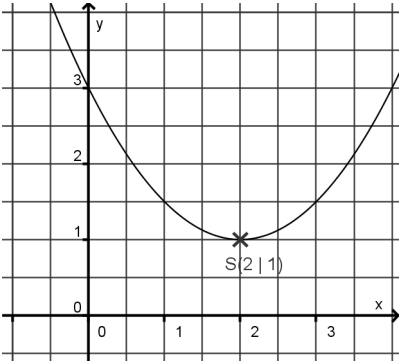
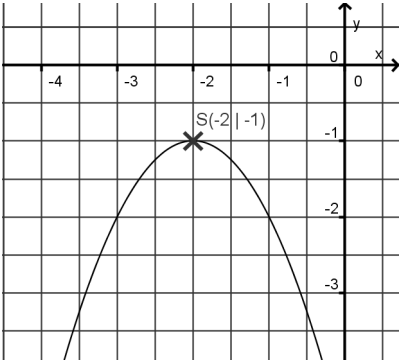
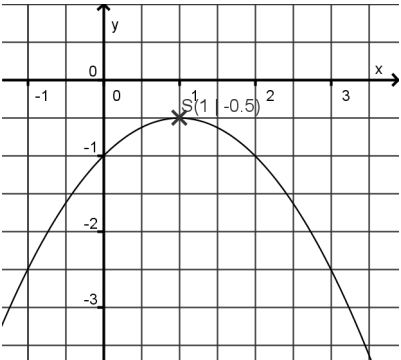
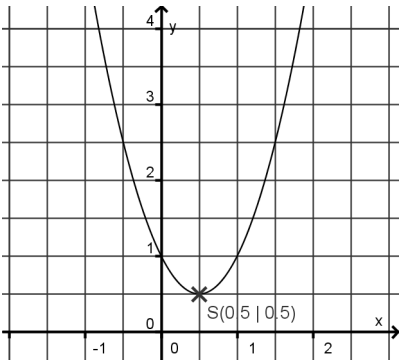
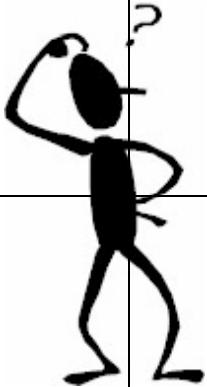
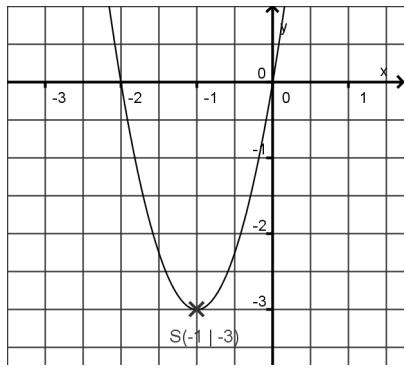

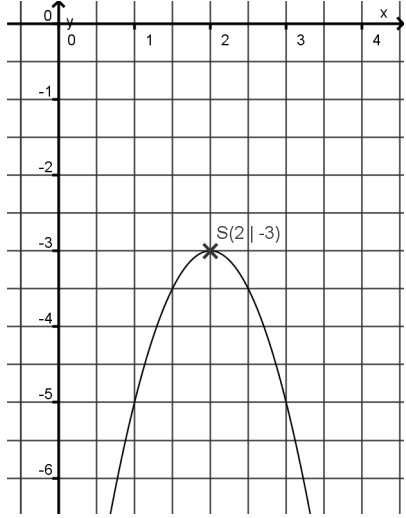

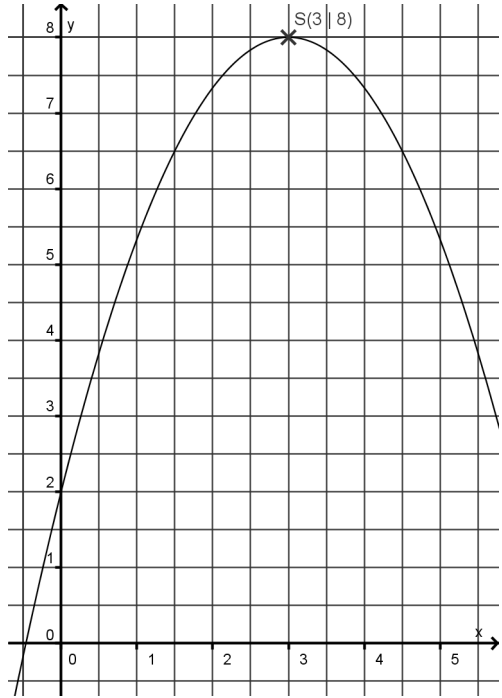
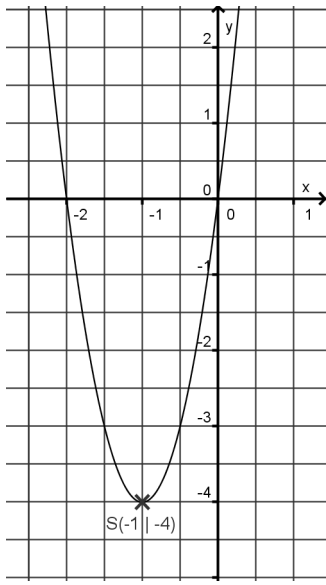
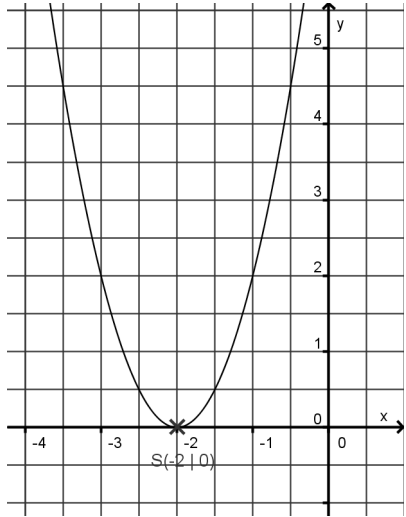


9I S. 82/1 – von der Normalform zur Scheitelpunktsform

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| <p>a)</p> | <p> $p_1: y = 0,5x^2 - 2x + 3$ $\Leftrightarrow y = 0,5 \cdot (x^2 - 4x + 2^2 - 2^2 + 6)$ $\Leftrightarrow y = 0,5 \cdot (x - 2)^2 + 1$ </p> <p> $D = \mathbb{R}, W = \{y \mid y \geq 1\}$ Symmetrieachse : $x = 2$ </p> |  |
| <p>b)</p> | <p> $p_2: y = -x^2 - 4x - 5$ $\Leftrightarrow y = -(x^2 + 4x + 2^2 - 2^2 + 5)$ $\Leftrightarrow y = -(x + 2)^2 - 1$ </p> <p> $D = \mathbb{R}, W = \{y \mid y \leq -1\}$ Symmetrieachse : $x = -2$ </p> |  |
| <p>c)</p> | <p> $p_3: y = -0,5x^2 + x - 1$ $\Leftrightarrow y = -0,5 \cdot (x^2 - 2x + 1^2 - 1^2 + 2)$ $\Leftrightarrow y = -0,5(x - 1)^2 - 0,5$ </p> <p> $D = \mathbb{R}, W = \{y \mid y \leq -0,5\}$ Symmetrieachse : $x = 1$ </p> |  |
| <p>d)</p> | <p> $p_4: y = (x - 1)^2 + x^2$ $\Leftrightarrow y = x^2 - 2x + 1 + x^2$ $\Leftrightarrow y = 2x^2 - 2x + 1$ $\Leftrightarrow y = 2(x^2 - x + 0,5^2 - 0,5^2 + 0,5)$ $\Leftrightarrow y = 2(x - 0,5)^2 + 0,5$ </p> <p> $D = \mathbb{R}, W = \{y \mid y \geq 0,5\}$ Symmetrieachse : $x = 0,5$ </p> |  |



| | | |
|-----------|--|--|
| <p>e)</p> | <p>p₅: $y = 3x^2 + 6x$ $\Leftrightarrow y = 3 \cdot (x^2 + 2x + 1^2 - 1^2)$ $\Leftrightarrow y = 3(x + 1)^2 - 3$</p> <p>$\mathbb{D} = \mathbb{R}$, $\mathbb{W} = \{y \mid y \geq -3\}$ Symmetrieachse : $x = -1$</p> |  |
| <p>f)</p> | <p>p₆: $y = -2x^2 + 8x - 11$ $\Leftrightarrow y = -2 \cdot (x^2 - 4x + 2^2 - 2^2 + 5,5)$ $\Leftrightarrow y = -2(x - 2)^2 - 3$</p> <p>$\mathbb{D} = \mathbb{R}$, $\mathbb{W} = \{y \mid y \leq -3\}$ Symmetrieachse: $x = 2$</p>  |  |
| <p>g)</p> | <p>p₇: $y = -\frac{2}{3}x^2 + 4x + 2$ $\Leftrightarrow y = -\frac{2}{3} \cdot (x^2 - 6x + 3^2 - 3^2 - 3)$ $\Leftrightarrow y = -\frac{2}{3}(x - 3)^2 + 8$</p> <p>$\mathbb{D} = \mathbb{R}$, $\mathbb{W} = \{y \mid y \leq 8\}$ Symmetrieachse: $x = 3$</p>  |  |

| | | |
|----|---|---|
| h) | <p> $p_8: y = 4x^2 + 8x$ $\Leftrightarrow y = 4(x^2 + 2x + 1^2 - 1^2)$ $\Leftrightarrow y = 4(x + 1)^2 - 4$ </p> <p> $D = \mathbb{R}, W = \{y \mid y \geq -4\}$ Symmetrieachse: $x = -1$ </p> |  |
| l) | <p> $p_9: y = 2x^2 + 8x + 8$ $\Leftrightarrow y = 2(x^2 + 4x + 2^2 - 2^2 + 4)$ $\Leftrightarrow y = 2(x + 2)^2$ </p> <p> $D = \mathbb{R}, W = \{y \mid y \geq 0\} = \mathbb{R}_0^+$ Symmetrieachse: $x = -2$ </p> |  |

