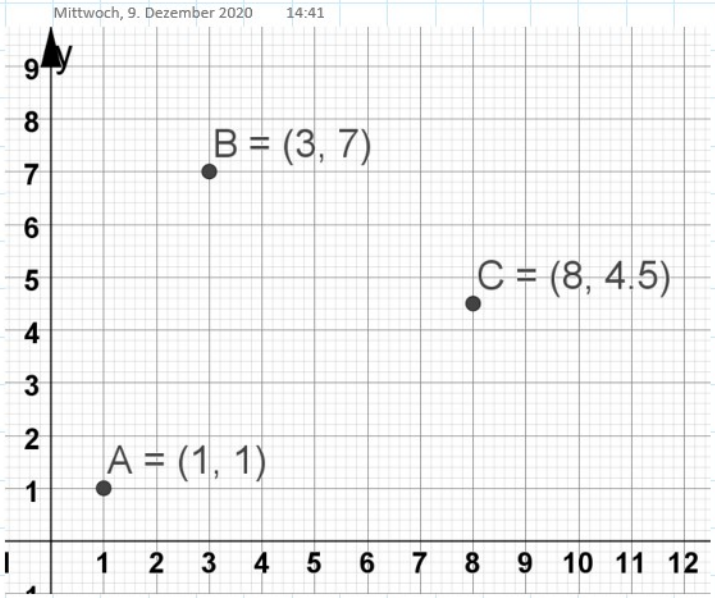

$f(x) = a_2 \cdot x^2 + a_1 \cdot x + a_0$

$f(1) = 1: \quad a_2 \cdot 1^2 + a_1 \cdot 1 + a_0 = 1$

$f(3) = 7: \quad a_2 \cdot 3^2 + a_1 \cdot 3 + a_0 = 7$

$f(8) = \frac{9}{2}: \quad a_2 \cdot 8^2 + a_1 \cdot 8 + a_0 = \frac{9}{2}$

$$\begin{vmatrix} 1a_2 + 1a_1 + 1a_0 = 1 \\ 9a_2 + 3a_1 + 1a_0 = 7 \\ 64a_2 + 8a_1 + 1a_0 = \frac{9}{2} \end{vmatrix} \quad \begin{matrix} (1) \\ (2) \\ (3) \end{matrix}$$

$(1)' = (2) - (1): \quad 8a_2 + 2a_1 = 6 \quad | \cdot 7$

$(2)' = (3) - (1): \quad 63a_2 + 7a_1 = \frac{7}{2} \quad | \cdot 2$

$$\begin{vmatrix} 56a_2 + 14a_1 = 42 \\ 126a_2 + 14a_1 = 7 \end{vmatrix}$$

$(2)' - (1)': \quad 70a_2 = -35 \quad | : 70$

$$\boxed{a_2 = -\frac{1}{2}}$$

Einsetzen in $(1)'$: $\quad 8a_2 + 2a_1 = 6 \quad | \; a_2 = -\frac{1}{2}$

$-4 + 2a_1 = 6 \quad | + 4$

$2a_1 = 10 \quad | : 2$

$$\boxed{a_1 = 5}$$

Einsetzen in (1)

$$1a_2 + 1a_1 + 1a_0 = 1 \quad \Big| \begin{array}{l} a_2 = -\frac{1}{2} \\ a_1 = 5 \end{array}$$

$$-\frac{1}{2} + 5 + a_0 = 1$$

$$\frac{9}{2} + a_0 = 1 \quad | -\frac{9}{2}$$

$$\boxed{a_0 = -\frac{7}{2}}$$

$$\boxed{f(x) = -\frac{1}{2}x^2 + 5x - \frac{7}{2}}$$