Exercise 8

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$$\left(\frac{1}{2}a + \frac{+y}{z+d}\right)$$

$$2\left[3\frac{a}{z} + 2\left(\frac{a}{d} + 7\right)\right]$$

$$x^2\left(\sum_n A_n + 3\left(b + \frac{1}{c}\right)\right)\Bigg]_0$$

$$\left(\frac{1}{2}a \right. \\ \left. + \frac{x+y}{z+d}\right) \tag{1}$$

$$2\left(1 + \frac{1}{2} + \frac{1}{2^2} + \frac{1}{2^3} + \frac{1}{2^4} + \frac{1}{2^5} + \frac{1}{2^6} + \frac{1}{2^7} + \frac{1}{2^8} + \frac{1}{2^9}\right. \\ \left. + \frac{1}{2^{10}} + \frac{1}{2^{11}} = \frac{4095}{1024}\right) \tag{2}$$

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$$\big(a + f(x)\big)$$

$$2\Bigg[3\frac{a}{z} + 2\bigg(\frac{a}{d} + 7\bigg)\Bigg]$$

$$\begin{matrix} a & b & c \\ d & e & f \\ g & h & i \end{matrix}$$

$$2A + 3 \times \begin{pmatrix} a & b & c \\ d & e & f \\ g & h & i \end{pmatrix}$$

$$\begin{vmatrix} a & b & c \\ d & e & f \\ g & h & i \end{vmatrix}$$

$$\begin{pmatrix} a & b & c \\ d & e & f \\ g & h & i \end{pmatrix}$$

$$\sigma^1 = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}, \quad \sigma^2 = \begin{pmatrix} 0 & -i \\ i & 0 \end{pmatrix} \text{ and } \sigma^3 = \begin{pmatrix} 1 & \\ 0 & -1 \end{pmatrix}$$

$$A = \begin{pmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{m1} & a_{m2} & \cdots & a_{mn} \end{pmatrix}$$

$$M = \begin{bmatrix} \frac{5}{6} & \frac{1}{6} & 0 \\ \frac{5}{6} & 0 & \frac{1}{6} \\ 0 & \frac{5}{6} & \frac{1}{6} \end{bmatrix}$$