

Задание к расчетно-графической работе №1

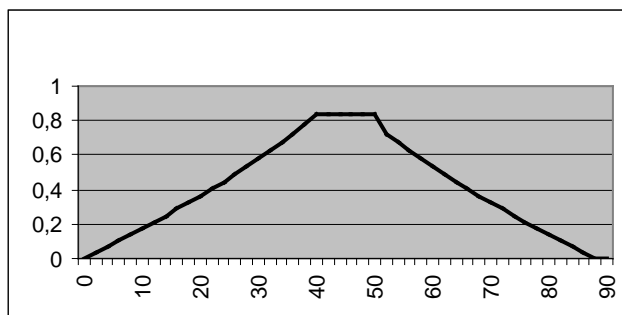
Составить программу на VBA для вычисления точек заданной функции своего варианта. Значения аргумента поместить в первый столбец активного листа рабочей книги Excel, а значения функции во второй столбец. Средствами Excel построить графики функции и перерисовать их в отчет.

Задание

Ожидаемый результат

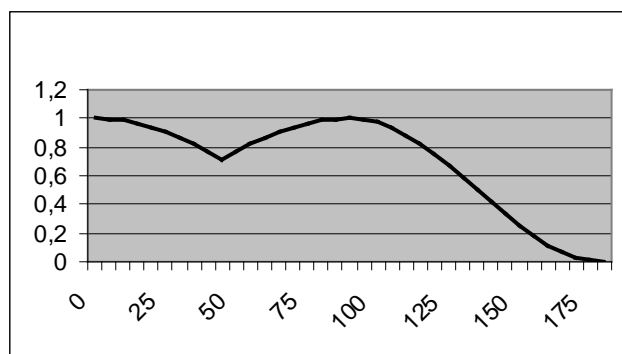
$$T = \begin{cases} tg(x) & \text{при } x < 40^{\circ} \\ tg(40^{\circ}) & \text{при } 40^{\circ} \leq x \leq 50^{\circ} \\ ctg(x) & \text{при } x > 50^{\circ} \end{cases}$$

1) $x = 0^{\circ}; 2^{\circ}; 4^{\circ} \dots; 90^{\circ}$



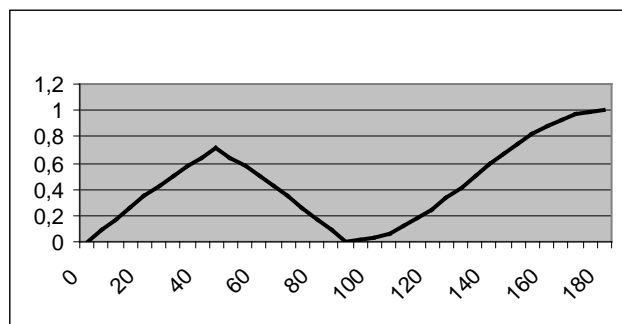
$$T = \begin{cases} \max(\sin(x), \cos(x)) & \text{при } x < 90^{\circ} \\ \sin^2(x) & \text{при } x \geq 90^{\circ} \end{cases}$$

2) $x = 0^{\circ}; 5^{\circ}; 10^{\circ} \dots; 180^{\circ}$



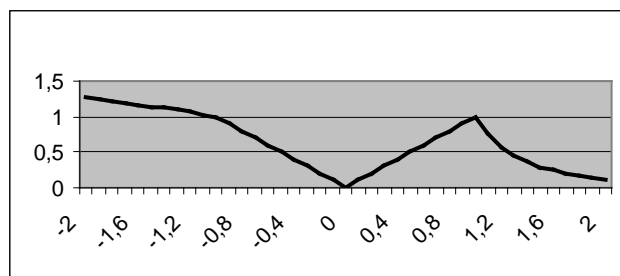
$$Y = \begin{cases} \min(\sin(x), \cos(x)) & \text{при } x < 90^{\circ} \\ \cos^2(2x) & \text{при } x \geq 90^{\circ} \end{cases}$$

3) $x = 0^{\circ}; 5^{\circ}; 10^{\circ} \dots; 180^{\circ}$



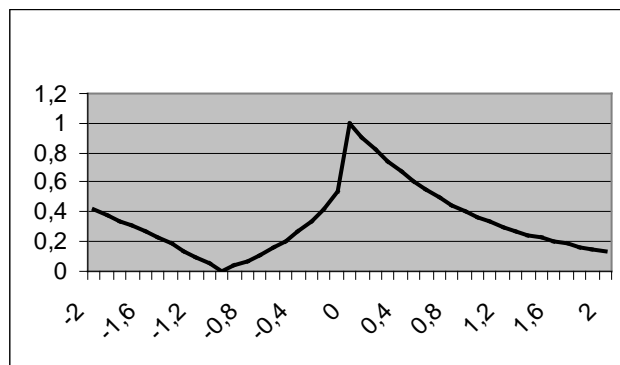
$$Z = \begin{cases} |x| & \text{при } -1 \leq x \leq 1 \\ \frac{1}{x^3} & \text{при } x > 1 \\ \sqrt[3]{x} & \text{при } x < -1 \end{cases}$$

4) $x = -2; -1,9; \dots; 2$



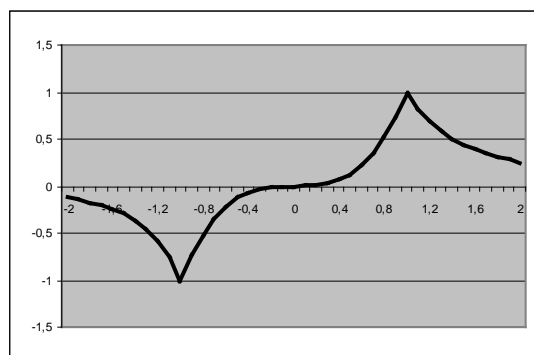
$$V = \begin{cases} e^{-x} & \text{при } x > 0 \\ \sqrt[3]{x} + 1 & \text{при } -1 \leq x \leq 0 \\ \sqrt{|x|} - 1 & \text{при } x < -1 \end{cases}$$

5) $-2 \leq x \leq 2 \quad \Delta x = 0,1$



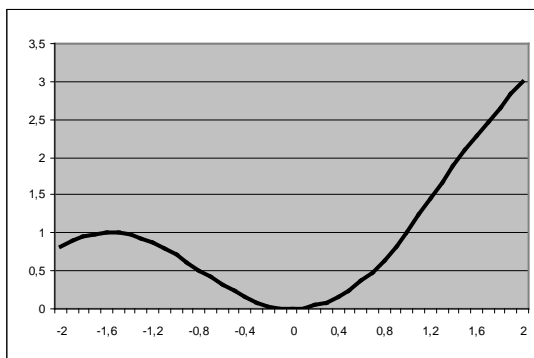
$$T = \begin{cases} \frac{1}{x^3} & \text{при } x \leq -1 \\ x^3 & \text{при } -1 < x < 1 \\ \frac{1}{x^2} & \text{при } x \geq 1 \end{cases}$$

6) $-2 \leq x \leq 2 \quad \Delta x = 0,1$



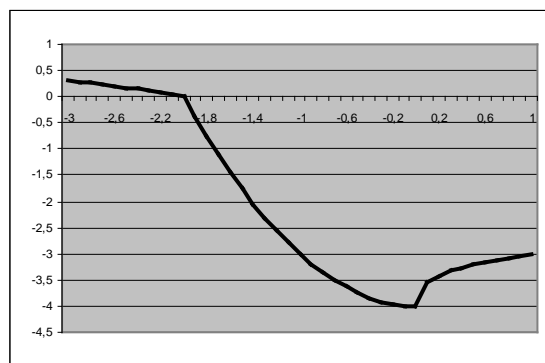
$$W = \begin{cases} x + \log_2 x & \text{при } x > 1 \\ x^2 & \text{при } 0 \leq x \leq 1 \\ \sin^2(x) & \text{при } x < 0 \end{cases}$$

7) $-2 \leq x \leq 2 \quad \Delta x = 0,1$



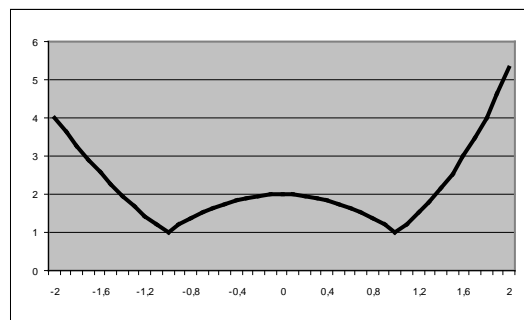
$$S = \begin{cases} \sqrt[3]{x} - 4 & \text{при } x > 0 \\ x^2 - 4 & \text{при } -2 \leq x \leq 0 \\ \lg(|x| - 1) & \text{при } x < -2 \end{cases}$$

8) $-3 \leq x \leq 1 \quad \Delta x = 0,1$



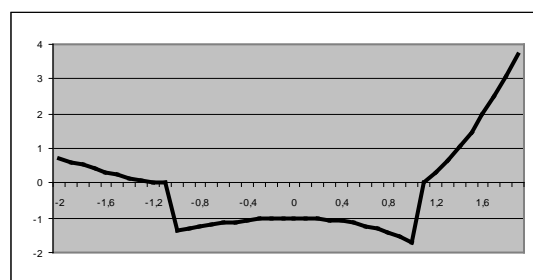
$$F = \begin{cases} -x^2 + 2 & \text{при } -1 < x \leq 1 \\ x^2 & \text{при } x \leq -1 \\ x\sqrt{x+3.8} & \text{при } x > 1 \end{cases}$$

9) $-2 \leq x \leq 2 \quad \Delta x = 0,1$



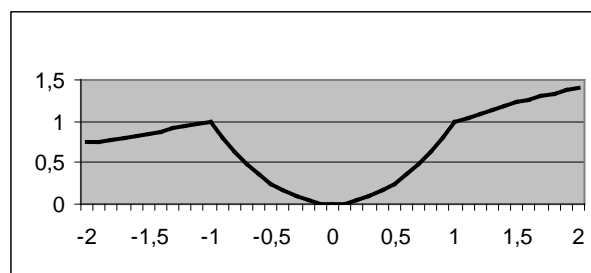
$$10) G = \begin{cases} e^x - 3 & \text{при } x > 1 \\ x - e^x & \text{при } -1 \leq x \leq 1 \\ \sin^2(1+x) & \text{при } x < -1 \end{cases}$$

$-2 \leq x \leq 2 \quad \Delta x = 0,1$



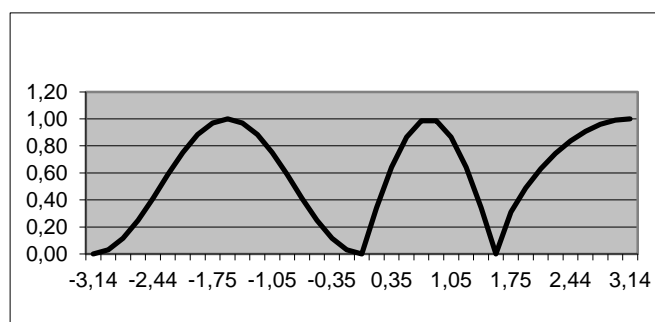
$$S = \begin{cases} \sqrt[3]{x} + 2 & \text{при } x < -1 \\ x^2 & \text{при } -1 \leq x \leq 1 \\ \sqrt{x} & \text{при } x > 1 \end{cases}$$

11) $-2 \leq x \leq 2 \quad \Delta x = 0,1$



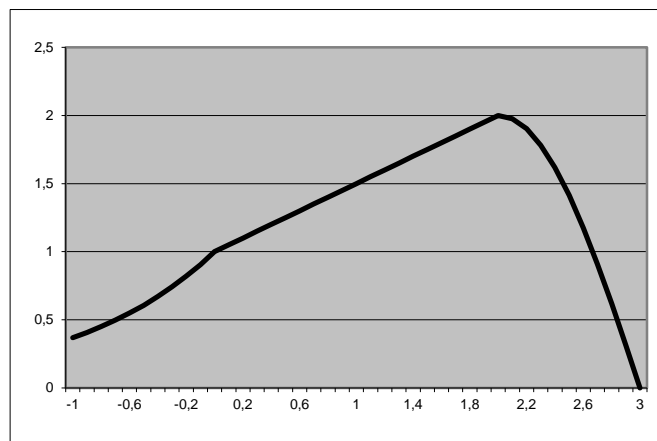
$$R = \begin{cases} \sin^2(x) & \text{при } x < 0 \\ \sin(2x) & \text{при } 0 \leq x \leq \frac{\pi}{2} \\ \sqrt[3]{\cos^2(x)} & \text{при } x > \frac{\pi}{2} \end{cases}$$

12) $-\pi \leq x \leq \pi ; \Delta x = \frac{\pi}{18}$



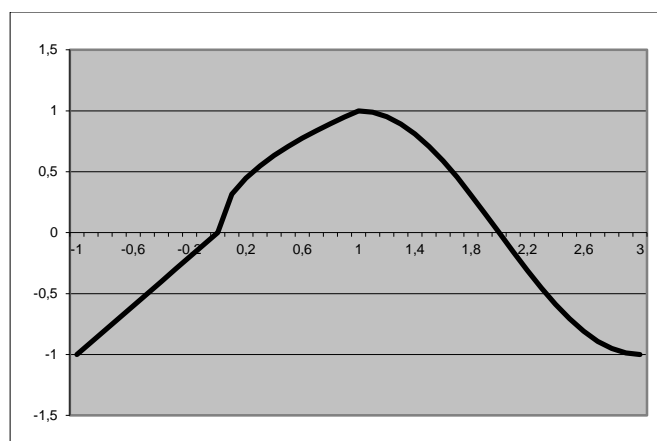
$$R = \begin{cases} e^x & \text{при } x < 0 \\ 1 + \frac{x}{2} & \text{при } 0 \leq x \leq 2 \\ 2 \sin\left(\frac{\pi(x-1)}{2}\right) & \text{при } x > 2 \end{cases}$$

13) $-1 \leq x \leq 3$; $\Delta x = 0,1$



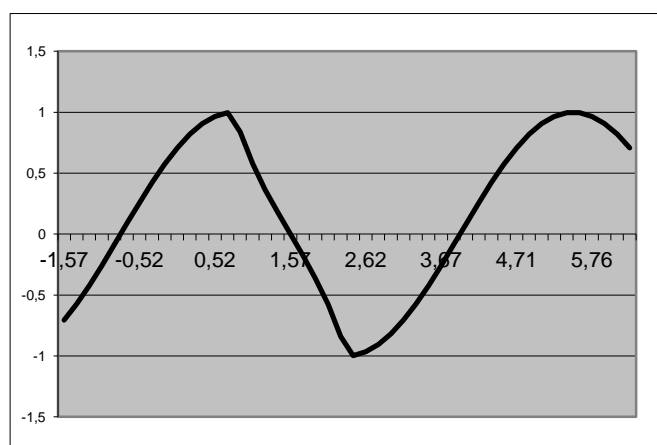
$$R = \begin{cases} x & \text{при } x < 0 \\ \sqrt{x} & \text{при } 0 \leq x \leq 1 \\ \sin\left(\frac{\pi x}{2}\right) & \text{при } x > 1 \end{cases}$$

14) $-1 \leq x \leq 3$; $\Delta x = 0,1$



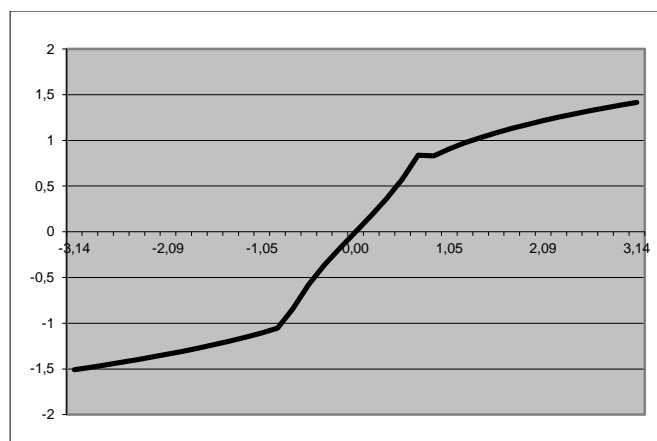
$$W = \begin{cases} \cos\left(x - \frac{\pi}{4}\right) & \text{при } x < \frac{\pi}{4} \\ \operatorname{Ctg}(x) & \text{при } \frac{\pi}{4} \leq x \leq \frac{3\pi}{4} \\ \sin\left(x + \frac{3\pi}{4}\right) & \text{при } x > \frac{3\pi}{4} \end{cases}$$

15) $-\frac{\pi}{2} \leq x \leq 2\pi$; $\Delta x = \frac{\pi}{18}$



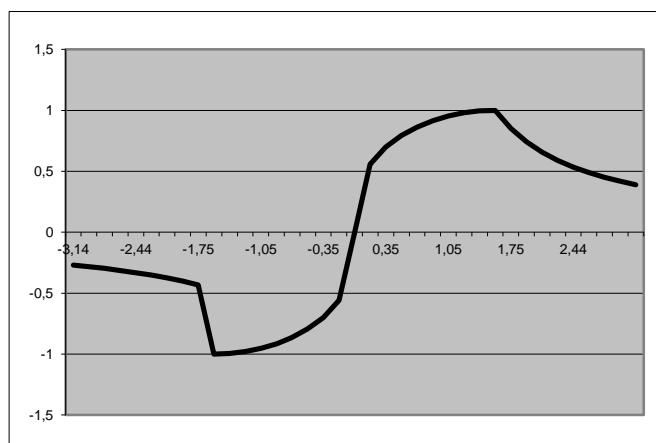
$$Y = \begin{cases} \operatorname{tg}(x) & \text{при } -\frac{\pi}{4} \leq x \leq \frac{\pi}{4} \\ \sqrt[3]{x - 0,3} & \text{при } |x| > \frac{\pi}{4} \end{cases}$$

16) $-\pi \leq x \leq \pi$; $\Delta x = \frac{\pi}{18}$



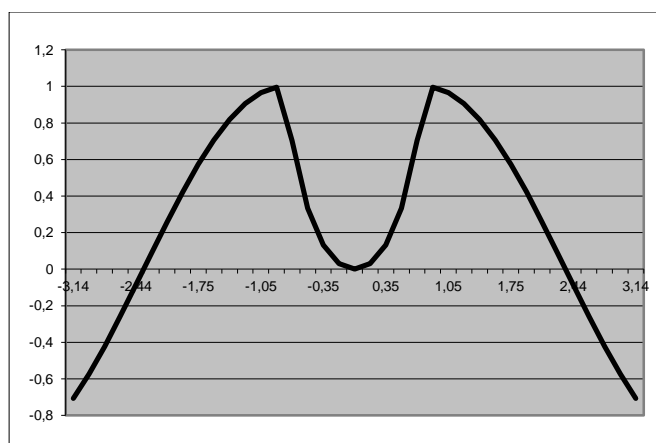
$$Z = \begin{cases} \sqrt[3]{\sin(x)} & \text{при } -\frac{\pi}{2} \leq x \leq \frac{\pi}{2} \\ \frac{1}{1+x-\frac{\pi}{2}} & \text{при } |x| > \frac{\pi}{2} \end{cases}$$

17) $-\pi \leq x \leq \pi ; \Delta x = \frac{\pi}{18}$



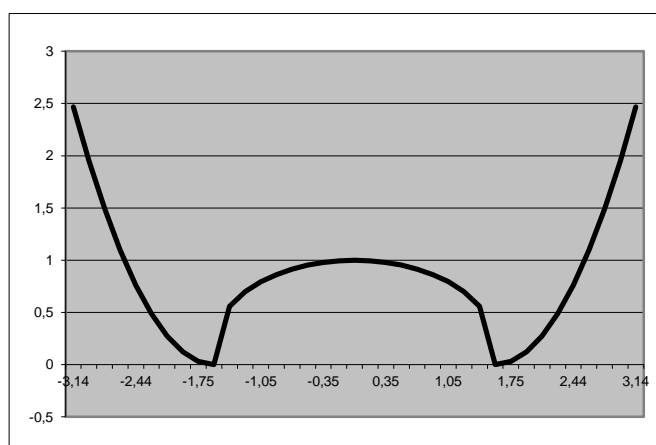
$$18) H = \begin{cases} \cos(x + \frac{\pi}{4}) & \text{при } x < -\frac{\pi}{4} \\ \operatorname{tg}^2(x) & \text{при } -\frac{\pi}{4} \leq x \leq \frac{\pi}{4} \\ \sin(x + \frac{\pi}{4}) & \text{при } x > \frac{\pi}{4} \end{cases}$$

$-\pi \leq x \leq \pi ; \Delta x = \frac{\pi}{18}$



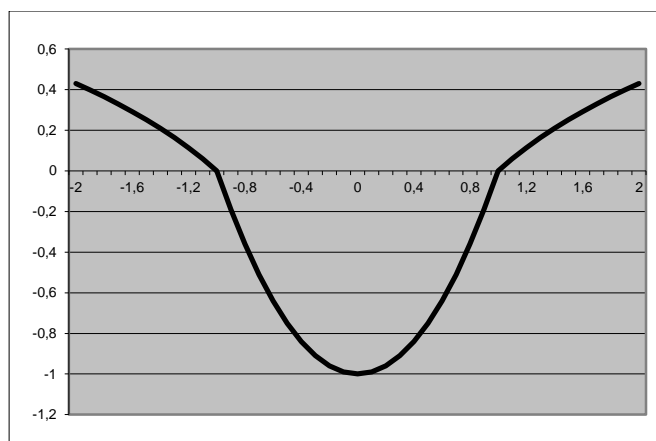
$$F = \begin{cases} (x + \frac{\pi}{2})^2 & \text{при } x < -\frac{\pi}{2} \\ \sqrt[3]{\cos(x)} & \text{при } -\frac{\pi}{2} \leq x \leq \frac{\pi}{2} \\ (x - \frac{\pi}{2})^2 & \text{при } x > \frac{\pi}{2} \end{cases}$$

19) $-\pi \leq x \leq \pi ; \Delta x = \frac{\pi}{18}$



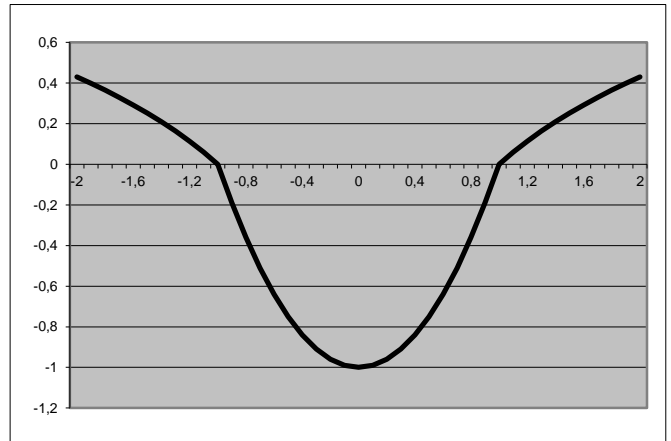
$$D = \begin{cases} x^2 - 1 & \text{при } -1 \leq x \leq 1 \\ \log_5(|x|) & \text{при } |x| > 1 \end{cases}$$

20) $-2 \leq x \leq 2 ; \Delta x = 0,1$



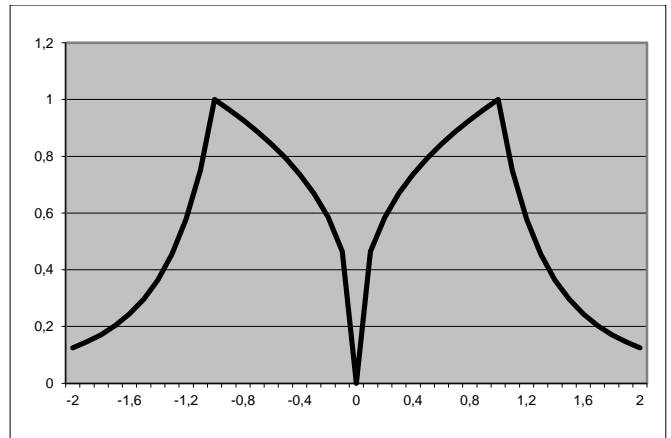
$$Z = \begin{cases} \sqrt[3]{x} & \text{при } -1 \leq x \leq 1 \\ \frac{1}{x^3} & \text{при } |x| > 1 \end{cases}$$

21) $-2 \leq x \leq 2$; $\Delta x = 0,1$



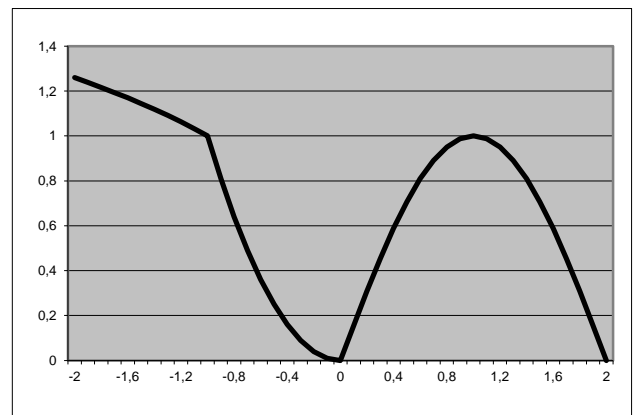
$$Z = \begin{cases} \sqrt[3]{|x|} & \text{при } -1 \leq x \leq 1 \\ \frac{1}{|x|^3} & \text{при } |x| > 1 \end{cases}$$

22) $-2 \leq x \leq 2$; $\Delta x = 0,1$



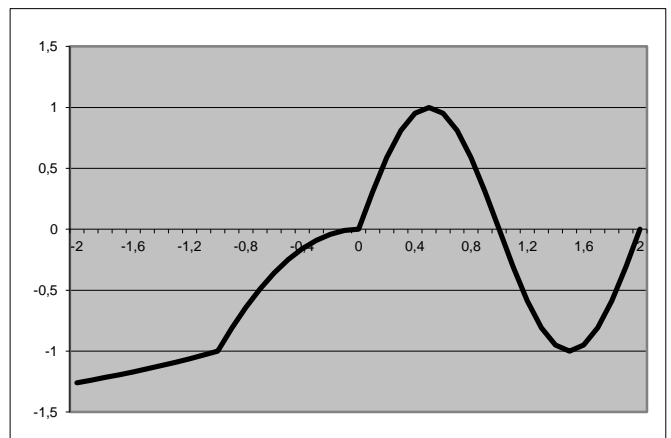
$$Z = \begin{cases} -\sqrt[3]{x} & \text{при } x < -1 \\ x^2 & \text{при } -1 \leq x < 0 \\ \sin\left(\frac{\pi x}{2}\right) & \text{при } x \geq 0 \end{cases}$$

23) $-2 \leq x \leq 2$; $\Delta x = 0,1$



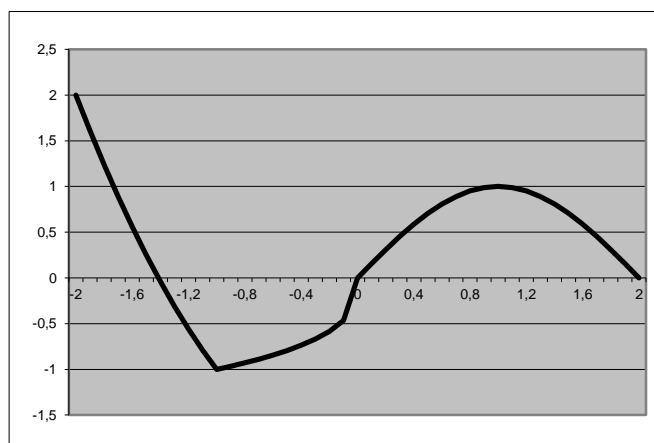
$$Z = \begin{cases} \sqrt[3]{x} & \text{при } x < -1 \\ -x^2 & \text{при } -1 \leq x < 0 \\ \sin(\pi x) & \text{при } x \geq 0 \end{cases}$$

24) $-2 \leq x \leq 2$; $\Delta x = 0,1$



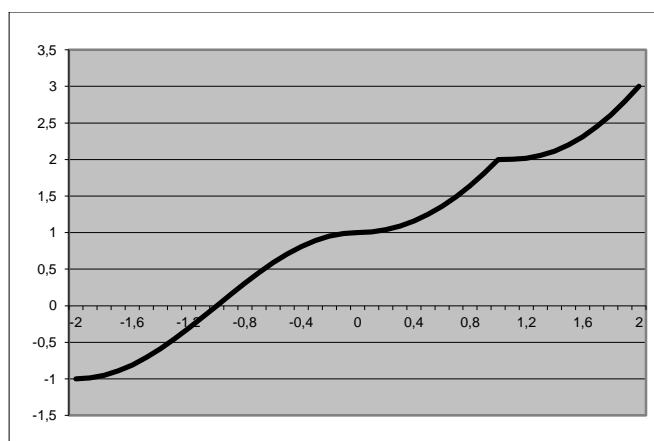
$$Z = \begin{cases} x^2 & \text{при } x < -1 \\ \sqrt[3]{x} & \text{при } -1 \leq x < 0 \\ \sin\left(\frac{\pi x}{2}\right) & \text{при } x \geq 0 \end{cases}$$

25) $-2 \leq x \leq 2$; $\Delta x = 0,1$



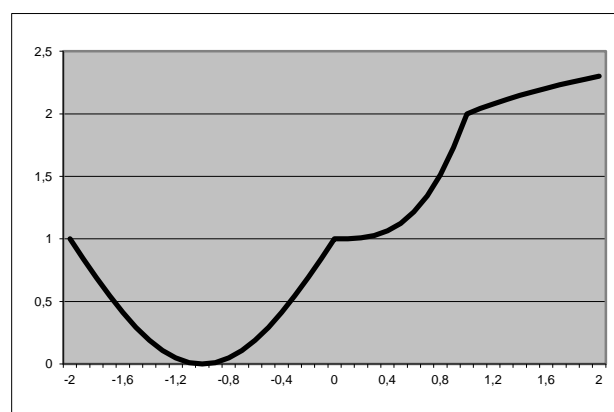
$$26) Z = \begin{cases} \cos\left(\frac{\pi |x|}{2}\right) & \text{при } x < -1 \\ x^2 + 1 & \text{при } 0 \leq x \leq 1 \\ \text{Log}_2^3(x) + 2 & \text{при } x > 1 \end{cases}$$

$-2 \leq x \leq 2$; $\Delta x = 0,1$



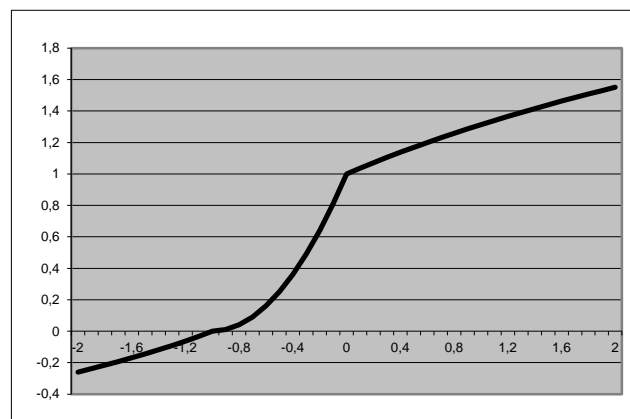
$$27) Z = \begin{cases} 1 - \sin\left(\frac{\pi |x|}{2}\right) & \text{при } x < 0 \\ x^3 + 1 & \text{при } 0 \leq x \leq 1 \\ \text{Lg}(x) + 2 & \text{при } x > 1 \end{cases}$$

$-2 \leq x \leq 2$; $\Delta x = 0,1$



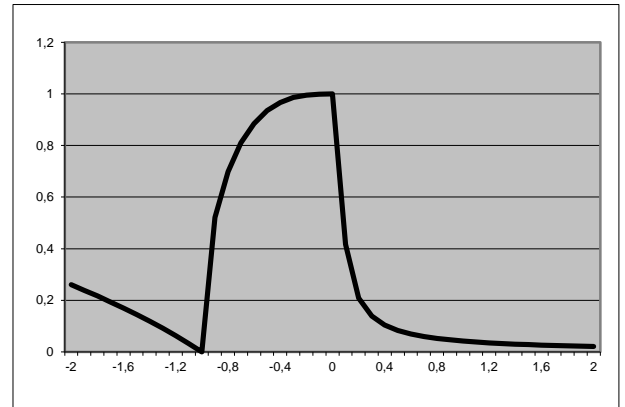
$$D = \begin{cases} \sqrt[3]{x} + 1 & \text{при } x < -1 \\ (x+1)^2 & \text{при } -1 \leq x \leq 0 \\ \ln(x+e) & \text{при } x > 0 \end{cases}$$

28) $-2 \leq x \leq 2$; $\Delta x = 0,1$



$$S = \begin{cases} -\sqrt[3]{x} - 1 & \text{при } x < -1 \\ \sqrt{x^3 + 1} & \text{при } -1 \leq x \leq 0 \\ \frac{1}{24x} & \text{при } x > 0 \end{cases}$$

29) $-2 \leq x \leq 2$; $\Delta x = 0,1$



$$V = \begin{cases} \sqrt[3]{x} + 2 & \text{при } x < -1 \\ x^2 & \text{при } -1 \leq x \leq 0 \\ \sin^2\left(\frac{\pi x}{2}\right) & \text{при } x > 0 \end{cases}$$

30) $-2 \leq x \leq 2$; $\Delta x = 0,1$

