

Matematisk analys del1

Dugga 2

2022-10-07, kl 14.00-17.00

1.

a. $D_f = [0, 2], V_f = [0, 2\pi]$

b. $\frac{-4\sqrt{2}}{9}$

c. $f(x) = 2 \sin\left(2x + \frac{2\pi}{3}\right)$.

2.

a. $x \geq 4$ eller $-2 < x \leq -1$

b. $a = 2$

3.

a. $\frac{2}{3}$

b. $\frac{3}{2}$

c. $\frac{2}{3}$

4.

a. $f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h} = \dots = \frac{5}{2\sqrt{5x+1}}$

b. $f'(x) = (6x+1)\sin(2x) + (6x^2+2x)\cos(2x)$

c. $f'(x) = \frac{1}{x^3} \frac{1}{\left(1 + \frac{1}{x^2}\right)\sqrt{1 + \frac{1}{x^2}}}$