

A function and its domain

Task 1. Determine the domain D_f of the function f given by the formula.

1. $f(x) = 1 - x$

2. $f(x) = \frac{1}{1-x}$

3. $f(x) = \sqrt{1-x}$

4. $f(x) = \frac{3x}{\sqrt{1-x}}$

5. $f(x) = \frac{1}{(2x-1)(3x+2)}$

6. $f(x) = \log_2(x - 4)$

7. $f(x) = 7^{3x+1}$

Task2. Draw a graph of the function f given by the formula and the domain D_f .

1. $f(x) = x^2$ $D_f = [-2,1] \cup \{2\}$

2. $f(x) = x^3$ $D_f = (0,2)$

3. $f(x) = \sqrt{x}$ $D_f = \{1,2\} \cup [4,9)$

4. $f(x) = \frac{1}{x}$ $D_f = (1,3)$

5. $f(x) = 2^x$ $D_f = (-1,2]$

6. $f(x) = \left(\frac{1}{2}\right)^x$ $D_f = [-2, 2]$

7. $f(x) = \log_2 x$ $D_f = (1,4)$

8. $f(x) = \log_{\frac{1}{2}} x$ $D_f = \{1, 2, 4\}$

