

Math 2001**August 28, 2019****Homework 3**

Read section p3 from your text

1. Find the domain of each function.

a. $f(x) = 3x^3 - 7x^2 + 15x - 19$

b. $f(x) = 6$

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

d. $f(x) = \frac{1}{x^2 - x - 6}$

e. $g(x) = \sqrt{x^2 + 1}$

f. $h(x) = \frac{x^2 + 3}{\sqrt{x+1}}$

2. Sketch the functions showing approximate shape and key points.

a. $y = 3x - 6$

b. $y = (x - 2)^2$

c. $y = |x + 3|$

d. $y = \frac{1}{x-2}$

3. Consider the functions $f(x) = 3x - 1$ $g(x) = x^2 + 5x$ $h(x) = \frac{3}{1-x}$

a. simplify $f(f(x))$

b. compute $g(f(2.93))$

c. compute $h(g(4.12))$

4. Sketch the function $y = \lfloor x + 1 \rfloor$ (HINT: see example 8 on page 24.)

5. Sketch the function

$$y = \begin{cases} x^2 & x < 0 \\ 3x & 0 \leq x < 2 \\ 4 & 2 \leq x \end{cases}$$