

MTH 111 SUMMER 2 2002

Practice Problems For Exam 1

I

1. Let be given the function: $f(x) = 4x^2 - x + 3$.

Find each of the following.

(a) $f(0)$; (b) $f(2)$; (c) $f(-2)$; (d) $f(-x)$; (e) $f(t)$; (f) $f(2-t)$.

2. Let be given the function $g(x) = \frac{x+5}{x-2}$.

Find the following

(a) $g(-5)$; (b) $g(2)$; (c) $g(x+h)$; (d) $g(1-a)$;

3. Find the domain of the given function

(a) $f(x) = x^2 - 2x + |x|$; (b) $g(x) = \frac{x^2+1}{x}$; (c) $h(x) = \frac{x+2}{x^2-1}$

II

1. Find the equation of the indicated line:

(a) The line with slope -3 and y -intercept $(0, 5)$.

(b) The line through the points $(2, 0)$ and $(-2, 2)$.

(c) The line through the point $(-1, 1)$ and parallel to the line $y = 3x + 1$

(d) The line through the point $(-1, 1)$ and perpendicular to the line $y = 3x + 1$

2. Find the slope and the y -intercept of the following linear equations

(a) $2x - y = 2$

(b) $3x + 4y = 8$

III

1. #24, page 117

2. Given $f(x) = 2x^2 + 1$ and $g(x) = x - 2$, find each of the following if it exists. If it does not exist, state why.

(a) $(f + g)(4)$; (b) $(f - g)(0)$; (c) $(fg)(-1)$; (d) $(f/g)(4)$; (e) $(f/g)(2)$.

3. # 64 and , page 120

4. Let $f(x) = 3x^2 - 2x$.

Construct and simplify the difference quotient $\frac{f(x+h) - f(x)}{h}$.

5. # 4, page 116

IV

1. #33, 34, 35, 40, 42, 45, 54, pages 135-136.

2. #2, 6, 16, pages 144-145