

Unit 4 Day 6

Quiz # 1

Advanced Functions

Warm-up

Warm-up Answers

Homework Answers p. 8

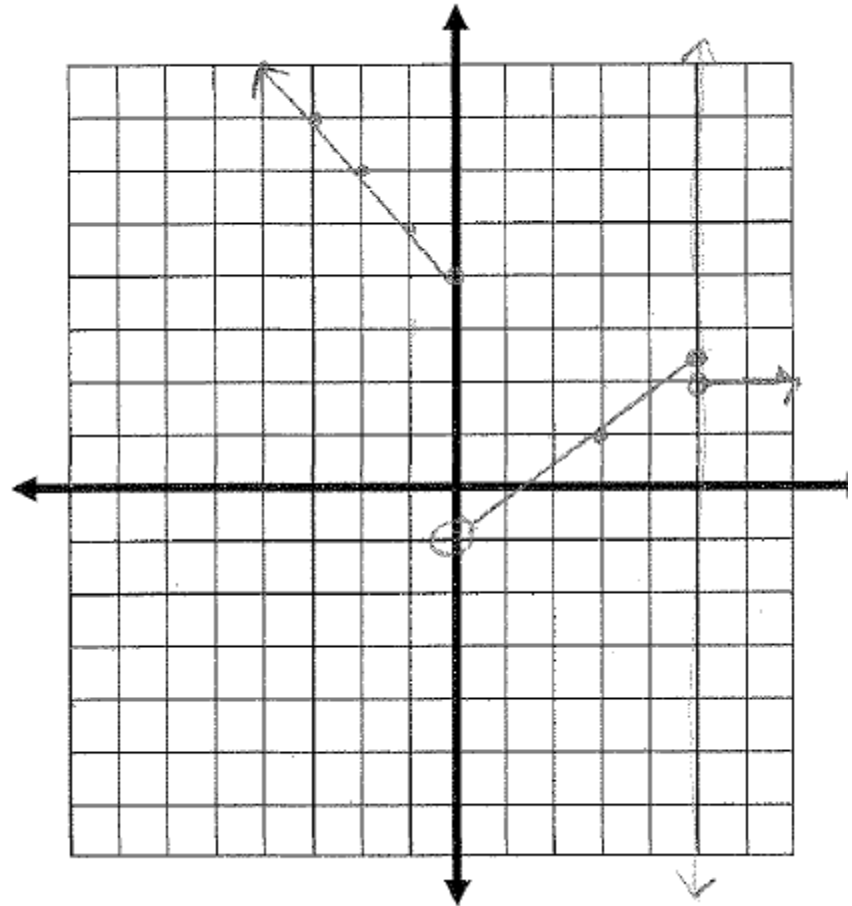
4.
$$\begin{cases} -x+4 & x \leq 0 \\ \frac{2x}{3}-1 & 0 < x \leq 5 \\ \frac{3}{2} & x > 5 \end{cases}$$

Function? Yes or No

$$f(-2) = -(-2) + 4 = \boxed{6}$$

$$f(0) = -0 + 4 = \boxed{4}$$

$$f(5) = \frac{2(5)}{3} - 1 = \boxed{2\frac{1}{3}}$$



Domain: $(-\infty, \infty)$

Range: $(-1, 7/3] \cup [4, \infty)$

Homework Answers p. 8

5.

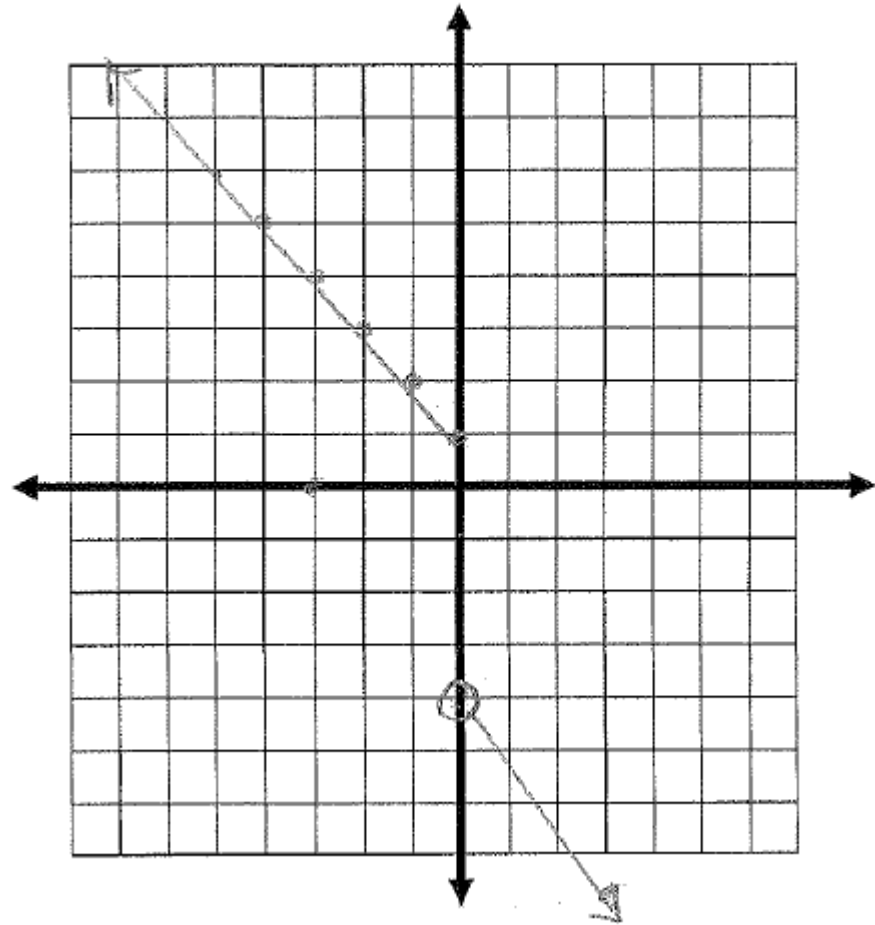
$$f(x) = \begin{cases} -x+1 & x \leq 0 \\ -\frac{4x}{3}-4 & x > 0 \end{cases}$$

Function? Yes or No

$$f(-4) = -(-4) + 1 = \boxed{5}$$

$$f(0) = 0 + 1 = \boxed{1}$$

$$f(3) = -\frac{4(3)}{3} - 4 = \boxed{-8}$$



Domain: $(-\infty, \infty)$

Range: $(-\infty, -4) \cup [1, \infty)$

Homework Answers p. 9

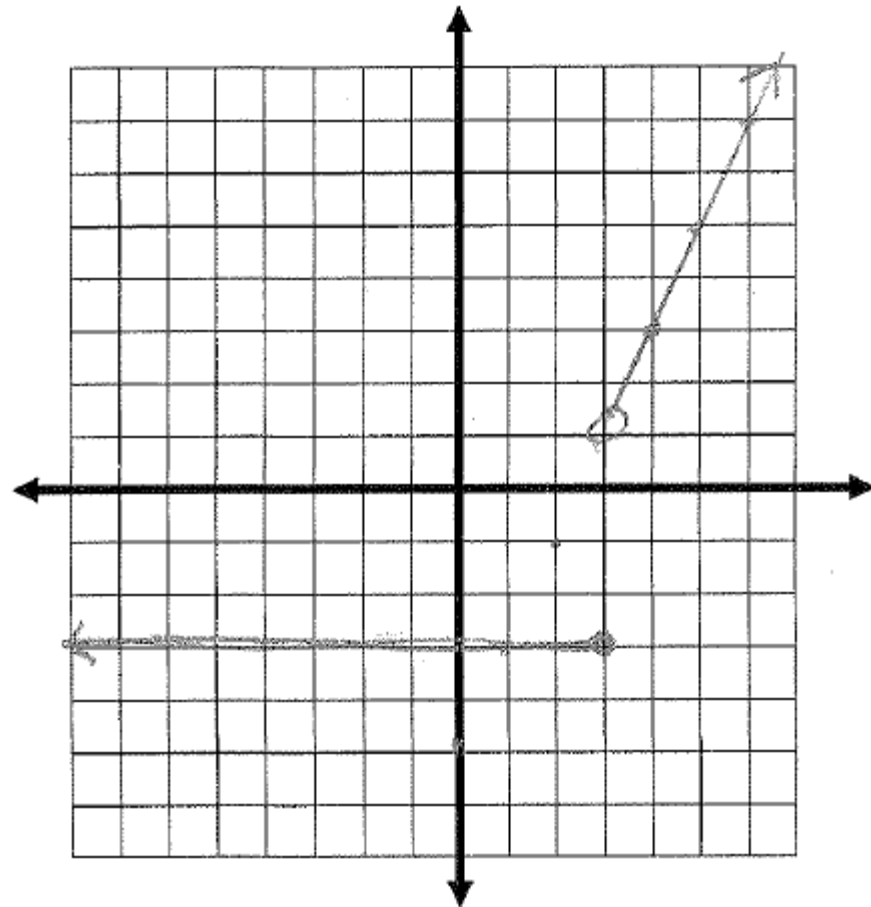
6. $f(x) = \begin{cases} -3 & x \leq 3 \\ 2x - 5 & x > 3 \end{cases}$

Function? Yes or No

$$f(-4) = \boxed{-3}$$

$$f(0) = \boxed{-3}$$

$$f(3) = \boxed{-3}$$



Domain: $(-\infty, \infty)$

Range: $\{-3\} \cup (1, \infty)$

Homework Answers p. 9

Evaluate the following given

$$f(x) = 3x - 1, g(x) = 5x, \text{ and } h(x) = 2x^2 + 4$$

$$7) g(3) - f(2) = 5(3) - (3(2) - 1) = 15 - 5 = \mathbf{10}$$

$$\begin{aligned} 8) f(x) + 2g(x) - h(x) &= 3x - 1 + 2(5x) - (2x^2 + 4) \\ &= 3x - 1 + 10x - 2x^2 - 4 = \mathbf{-2x^2 + 13x - 5} \end{aligned}$$

$$\begin{aligned} 9) h(2x - 1) &= 2(2x - 1)^2 + 4 \\ &= 2(2x - 1)(2x - 1) + 4 &= 2(4x^2 - 4x + 1) + 4 \\ &= 8x^2 - 8x + 2 + 4 &= \mathbf{8x^2 - 8x + 6} \end{aligned}$$

$$\begin{aligned} 10) h(x - 4) - 2f(x) &= 2(x - 4)^2 + 4 - 2(3x - 1) \\ &= 2(x - 4)(x - 4) + 4 - 6x + 2 \\ &= 2(x^2 - 8x + 16) - 6x + 6 \\ &= 2x^2 - 16x + 32 - 6x + 6 = \mathbf{2x^2 - 22x + 38} \end{aligned}$$



Tonight's Homework

Packet p. 10

Remember to write
Domain & Range
using Interval Notation

Kahoot! - Piecewise

1. <https://play.kahoot.it/#/?quizId=5640c5ec-e2b1-4bc2-bf7b-d805e31214f3> (easy)

2. <https://play.kahoot.it/#/k/9e900165-87e2-4ca1-b5d3-48def2e47912> (harder)

3. <https://play.kahoot.it/#/?quizId=95c8f843-99cd-416f-8059-84ec66972438>
(basic functions)

Matching Activity or Quiz Review

Then finish **Practice** from yesterday's
notes

Practice: Notes p. 22 - 25



Tonight's Homework

Packet p. 10

Remember to write
Domain & Range
using Interval Notation