

Day 5

~ Quiz 1 Day

Warm Up ~ Day 5 Quiz 1 day

1)
$$f(x) = \frac{\sqrt{x+7}}{x-4}$$

Find the a) domain b) x & y intercepts
c) range d) discontinuities
e) end behavior using limit notation

2)
$$g(x) = \sqrt{4x^2 + 4x - 15}$$

Find the a) domain b) x & y intercepts
c) range

Warm Up ~ Day 5

1)

$$f(x) = \frac{\sqrt{x+7}}{x-4}$$

Find the

- a) domain
- b) x & y intercepts
- c) range
- d) discontinuities

- e) end behavior using limit notation

Warm Up ~ Day 5

$$2) \quad g(x) = \sqrt{4x^2 + 4x - 15}$$

Find the

a) domain

b) x & y intercepts

c) range

Warm Up ~ Day 5 ANSWERS

1)

$$f(x) = \frac{\sqrt{x+7}}{x-4}$$

Find the

a) domain $D: [-7, 4) \cup (4, \infty)$

b) x & y intercepts

$$x\text{-int} : (-7, 0) \quad y\text{-int} : (0, -\frac{\sqrt{7}}{4})$$

c) range $R: (-\infty, \infty)$

d) discontinuities

Hole (Removable Disc.): *None*

V.A. (NonRemovable Disc.) at $x=4$

e) end behavior using limit notation

$$\lim_{x \rightarrow \infty} f(x) = 0$$

$$\lim_{x \rightarrow -\infty} f(x) = 0$$

Warm Up ~ Day 5 ANSWERS

$$2) g(x) = \sqrt{4x^2 + 4x - 15}$$

Find the

a) domain *Domain* : $(-\infty, -\frac{5}{2}] \cup [\frac{3}{2}, \infty)$

b) x & y intercepts *x-int* : $(-\frac{5}{2}, 0)$ and $(\frac{3}{2}, 0)$
y-int : *none*

c) range *Range* : $[0, \infty)$

Let's look last night's HW

Quiz #1 Review Handout

Tonight's HW:

Handout "Unit 4 ICM

Rational Functions Practice"

(Except we'll skip some of
the bottom table for now)

Next slides saved for later date
during Fall 18 semester

Student Practice

- Find the intervals increasing/decreasing.
- State the domain and range. **HINT: find extrema ☺**

- A) $g(x) = \frac{x^2}{x^2 - 1}$

Increasing:

Decreasing:

Domain:

Range:

- B) $h(x) = |x - 4| + 5$

Increasing:

Decreasing:

Domain:

Range:

Student Practice ANSWERS

- Find the intervals increasing/decreasing.
- State the domain and range.

- A) $g(x) = \frac{x^2}{x^2 - 1}$

Increasing: $(-\infty, -1) \cup (-1, 0]$

Decreasing: $[0, 1) \cup (1, \infty)$

Domain: $(-\infty, -1) \cup (-1, 1) \cup (1, \infty)$

Range: $(-\infty, 0] \cup (1, \infty)$

- B) $h(x) = |x - 4| + 5$

Increasing: $[4, \infty)$

Decreasing: $(-\infty, 4]$

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

Range: $[5, \infty)$

Practice with Increasing, Decreasing, Max and Min

Packet p. 7-8 #27, 33, 41

**You'll have ones like this for HW
tonight & tomorrow
– AND on the next quiz!**

MORE

**Practice with Increasing,
Decreasing, Max and Min**

**You'll have ones like this for HW
tonight & on the next quiz!**

More Practice: Increasing/Decreasing

- 30. $f(x) = |x + 1| + |x - 1| - 3$

- 32. $h(x) = \frac{1}{2}(x + 2)^2 - 1$

- 34. $f(x) = x^3 - x^2 - 2x$

More Practice:

Increasing/Decreasing ANSWERS

• 30. $f(x) = |x + 1| + |x - 1| - 3$

Inc : $[1, \infty)$ *Dec* : $(-\infty, -1]$

• 32. $h(x) = \frac{1}{2}(x + 2)^2 - 1$

Inc : $[-2, \infty)$ *Dec* : $(-\infty, -2]$

• 34. $f(x) = x^3 - x^2 - 2x$

Inc : $(-\infty, -0.55] \cup [1.22, \infty)$ *Dec* : $[-0.55, 1.22]$