

Precalculus (23554) (Math 1) HW Set #4. Due in class on Wednesday, March 4th.

In order to receive a ✓, you must attempt all problems and write out all steps leading to your answers neatly and legibly. You cannot simply write the correct answer to demonstrate your mathematical understanding.

You must include your name, the course title and section number on the first page. All homework sets must be stapled. No late homework will be accepted without my express permission. You may receive a ✗ if these guidelines are not followed.

Good luck!

Find the domain and range of the function.

1) $f(x) = \frac{2}{8 + \sqrt{x}}$

1) _____

2) $g(z) = \frac{-8}{\sqrt{z+1}}$

2) _____

3) $g(z) = \sqrt{9 - z^2}$

3) _____

4) $g(z) = 3 - \sqrt{z}$

4) _____

5) $F(t) = \frac{7}{\sqrt{t}}$

5) _____

Graph the function.

6) $f(x) = \begin{cases} 3x + 2, & x < -2 \\ x, & -2 \leq x \leq 3 \\ 2x - 1, & x > 3 \end{cases}$

6) _____

7) $G(x) = \begin{cases} |x| - 4, & x < 0 \\ -4, & x \geq 0 \end{cases}$

7) _____

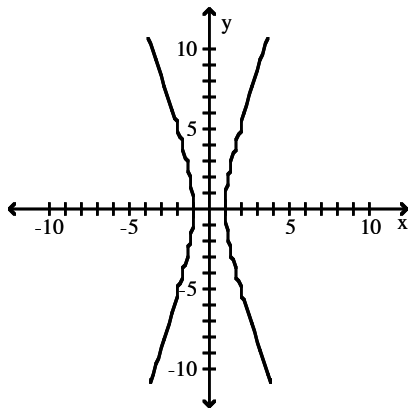
8) $F(x) = \begin{cases} -1 - x, & x \leq 2 \\ 1 - 3x, & x > 2 \end{cases}$

8) _____

Determine whether the graph is that of a function. If it is, use the graph to find its domain and range, the intercepts, if any, and any symmetry with respect to the x-axis, the y-axis, or the origin.

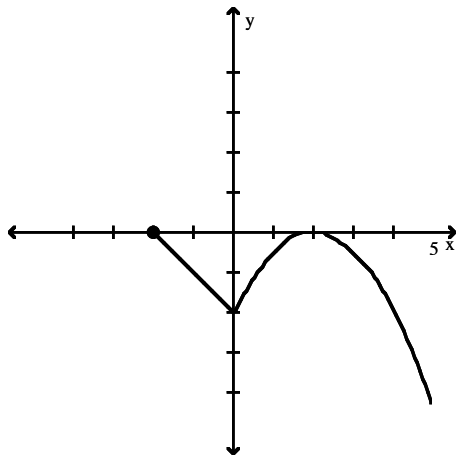
9)

9) _____



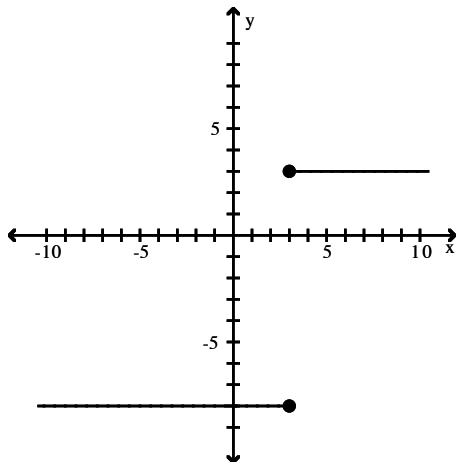
10)

10) _____



11)

11) _____



Answer Key

Testname: MATH_1_HW4

1) D: $[0, \infty)$, R: $\left[0, \frac{1}{4}\right]$

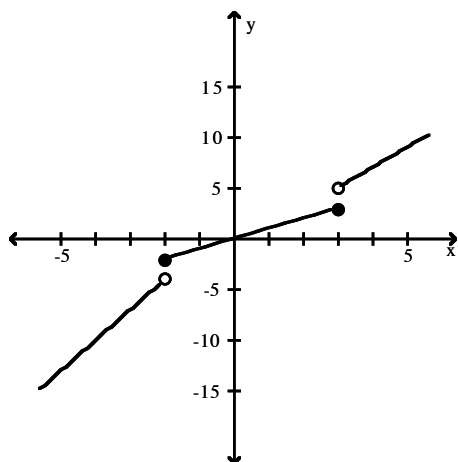
2) D: $(-1, \infty)$, R: $(-\infty, 0)$

3) D: $[-3, 3]$, R: $[0, 3]$

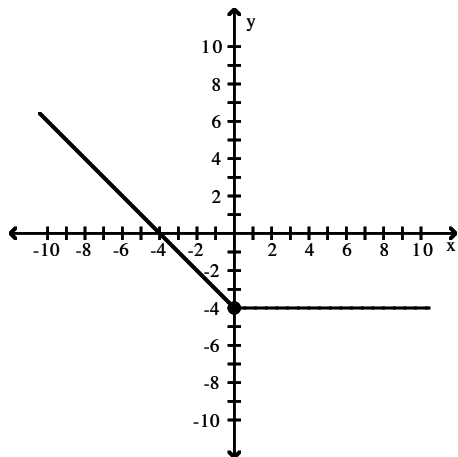
4) D: $[0, \infty)$, R: $(-\infty, 3]$

5) D: $(0, \infty)$, R: $(0, \infty)$

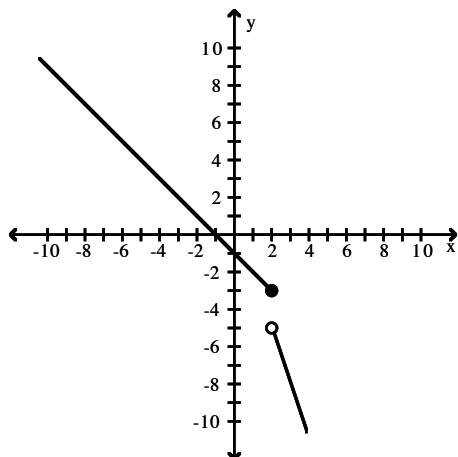
6)



7)



8)



Answer Key

Testname: MATH_1_HW4

9) not a function

10) function

domain: $\{x \mid x \geq -2\}$

range: $\{y \mid y \leq 0\}$

intercepts: $(-2, 0)$, $(0, -2)$, $(2, 0)$

symmetry: none

11) not a function