MATH 1310 Review for Test -3

Where: CASA Testing Center
Time: minutes
Number of Examples:
Multiple Choice Questions (total of pts)
Free Response Questions (total of pts)

What is covered: **Chapter 3**.

Do not forget to reserve a seat for Test – 3!

Take practice Test – 3! 10% of your best score will be added to your test grade.

For the free response part, please show your work neatly. Do not skip steps.

Remember the MAKE UP policy: NO MAKE UPS!

Example 1: Given the function $f(x)=\begin{cases} 2x-5 & x<-5 \\ x^2+1 & -5\le x\le 3 \\ -3x+12 & x>3 \end{cases}$,

Find:

a) $f(6)$

b) $f(-10)$

c) $f(-5)$

Example 2: Find the domain of the following functions:

a) $g(x) = x^3 - 2x^2 + 7$

b) $f(x) = \dfrac{x-2}{5x-40}$

c) $f(x) = \sqrt{11-2x}$

Example 3: Which of the following points is ON the graph of the function
$f(x) = 4x^2 - x + 1$?

a) (2, 12)
b) (1, 0)
c) (-1, 6)
d) (0, 0)
e) none

Example 4: Determine if the following function is even, odd, or neither.

a. $f(x) = x^3 + 5x$

b. $f(x) = 3x^4 - \dfrac{7}{x^2}$

Example 5: $f(x) = x^2 + 12x - 2$

What is the vertex of the function?

What is the maximum/minimum value?

Example 6: Given $f(x) = -3x^2 + 24x - 2$.

Write the function in standard form.

Example 7: Let $f(x) = \dfrac{4}{x-2}$ and $g(x) = x^2 + 1$.

Find $(f \circ g)(3)$

Example 8: Let $f(x) = x^3$ and $g(x) = 5x - 12$.

Find $(f \circ g)(x)$

Example 9: Suppose $f(x) = 4x + 11$. Let g be the inverse of f. Find g(x).

Example 10: Suppose $f(x) = \frac{1}{x-8}$. Find $f^{-1}(x)$.

Example 11: Describe the transformations needed to:

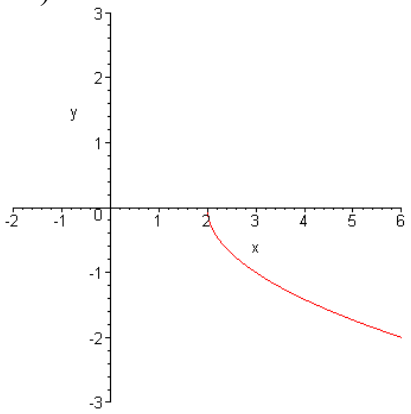
a) Go from $f(x) = |x|$ to $f(x) = |x+4| - 2$.

b) Go from $g(x) = \sqrt{x}$ to $g(x) = -\sqrt{x-5}$.

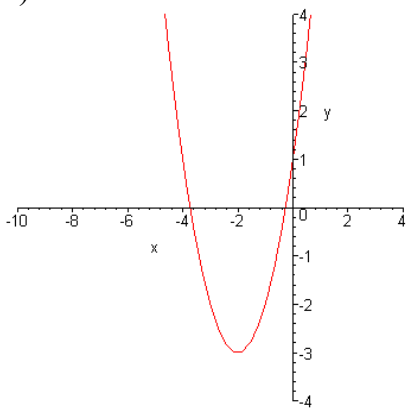
b) Go from $g(x) = \sqrt{x}$ to $g(x) = \sqrt{-x} + 1$.

Example 12: Write the equations for the functions graphed below:

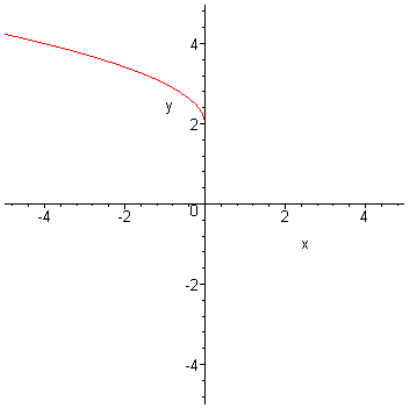
a)



b)



c)

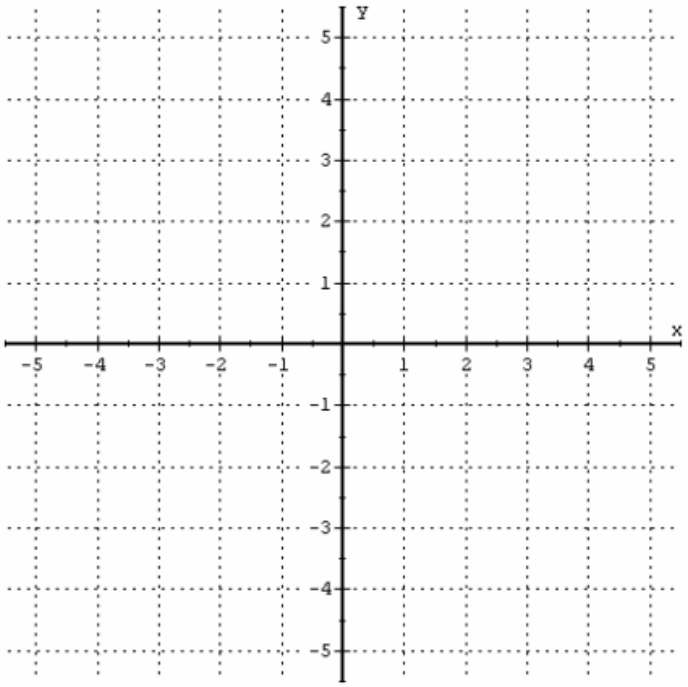


Example 13: $f(x) = -\sqrt{x-2}+1$

a) State the basic function.

b) State the transformations.

c) Graph the function,
label the key point(s).

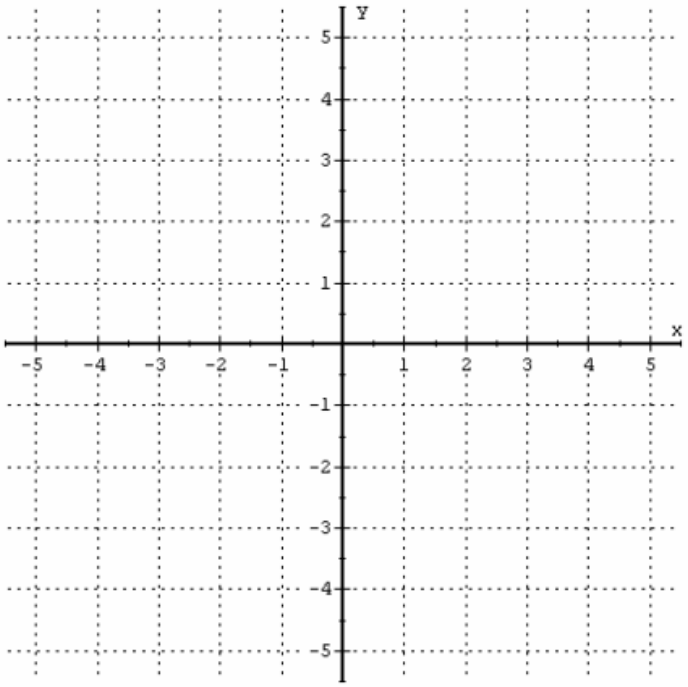


Example 14: $f(x) = -|x+4|-2$

a) State the basic function.

b) State the transformations.

c) Graph the function,
label the key point(s).



Example 16: $f(x) = -(x+5)^2$

a) State the basic function.

b) State the transformations.

c) Graph the function,
label the key point(s).