NAME: _____ PERIOD: _____ DATE: _____

Homework Problem Set

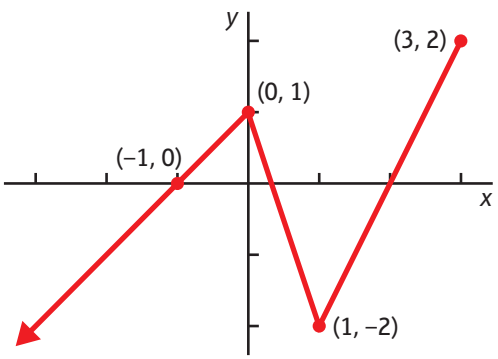
Use the graph of $g(x)$, on the right, to answer the following questions.

1. What is $g(-1)$?

   $g(-1)=0$

2. What is $g(3)$?

   $g(3)=2$



3. What is the domain of this function?

   $(-\infty, 3]$

4. What is the range of this function?

   $(-\infty, 2]$

5. At what numbers is $g(x) = 0$?

   $-1, \frac{1}{3}, 2$

6. For what intervals is the function increasing?

   $(-\infty, 0)$ and $(1, 3)$

7. For what intervals is the function decreasing?

   $(0, 1)$

8. For what intervals is the function constant?

   NONE

9. Is there a relative maximum or minimum on this graph? Where are they?

   RELATIVE MAX (0,1) RELATIVE MIN. (1,-2)

10. Can you determine $g(4)$? If so, what is it and how did you find it?

    No, it's not part of the domain.

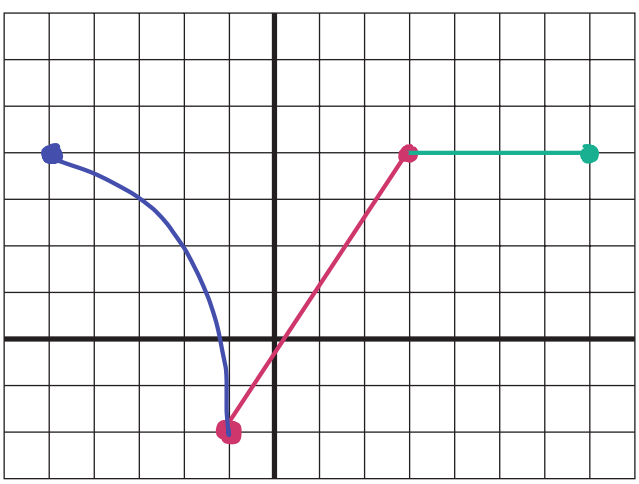
11. Can you determine $g(-6)$? If so, what is it and how did you find it?

    yes, you need to find equation of of line for domain $(-\infty, 0)$

    Equation $f(x)=x+1$ so $f(-6)=-5$

12. **Open Ended** Sketch a function that follows all the descriptions given.

- ☐ The function is increasing from $(-1, 3)$.
- ☐ The function is decreasing from $(-5, -1)$.
- ☐ The function is constant from $(3, 7)$.
- ☐ The function is linear from $(-1, 3)$.
- ☐ The function is nonlinear on the interval $(-5, -1)$.
- ☐ The function is continuous, meaning there are no breaks.
- ☐ $(-5, 4)$ is a point on the function.
- ☐ The domain is $[-5, 7]$.
- ☐ The range is $[-2, 4]$.



possible graph answers may vary

13. Which descriptions in Problem 12 were the most difficult to sketch? Why?

Answers may vary.

14. Which clues did you use first? Why?

Answers may vary.
The point (-5, 4) is definitely on the graph, so it's easy to place