Are you ready?

Homework Questions?

Don't be like this elephant - don't find yourself in a hole too deep to get out of!

1.1.3 Domain and Range

Goals:

For all relations be able to identify the Domain and Range, and write them in different ways.

CW 1-27 to 1-33

HW 1-35 to 1-41

1-27 In teams, graph and find the mapping, and domain and range of these relations.

$f(x) = \sqrt{x}$

$h(x) = 2^x - 7$

$g(x) = -(x-2)^2$

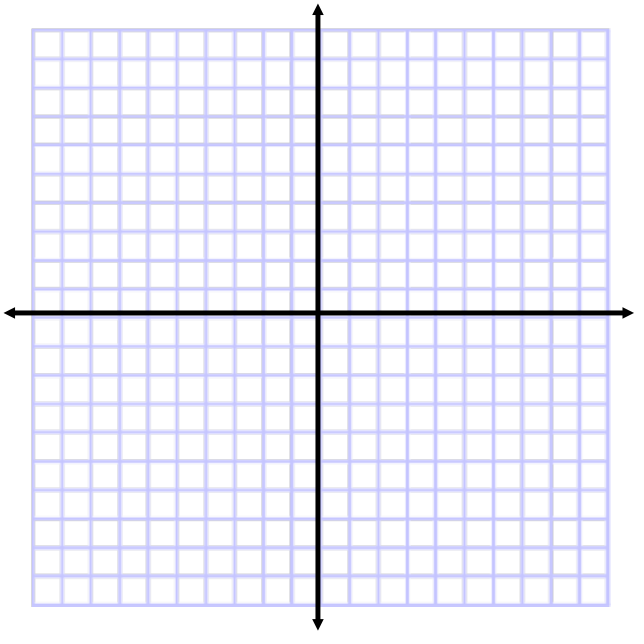
$k(x) = -\frac{x}{2} - 1$

$$f(x) = \sqrt{x}$$

Mapping

Domain

Range

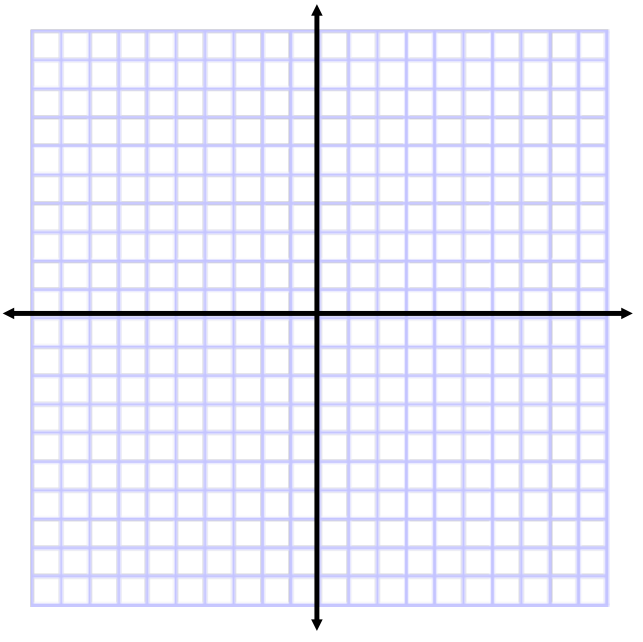


$$g(x) = -(x-2)^2$$

Mapping

Domain

Range

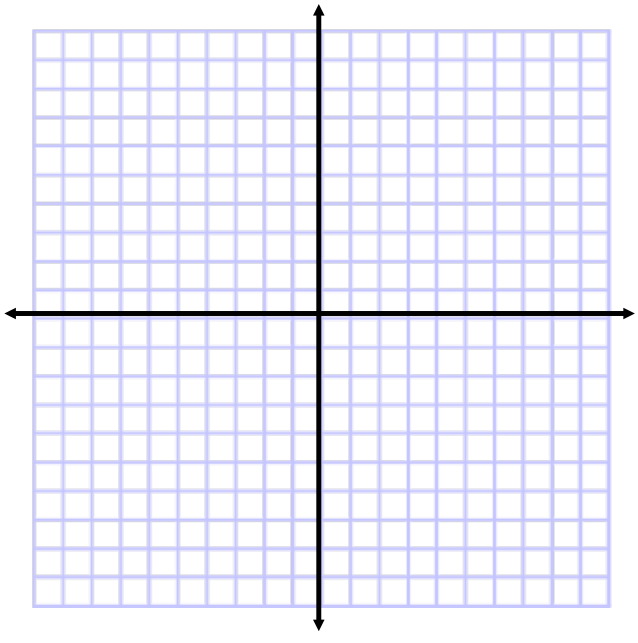


$$h(x) = 2^x - 7$$

Mapping

Domain

Range

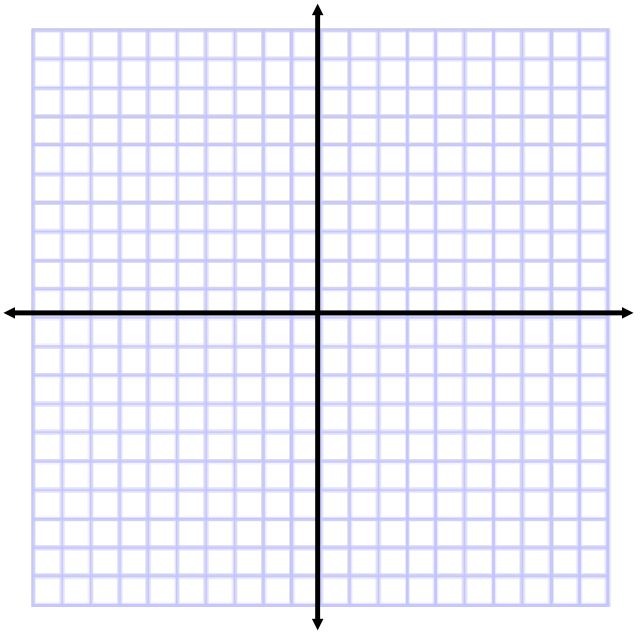


$$k(x) = -\frac{x}{2} - 1$$

Mapping

Domain

Range



Your turn.

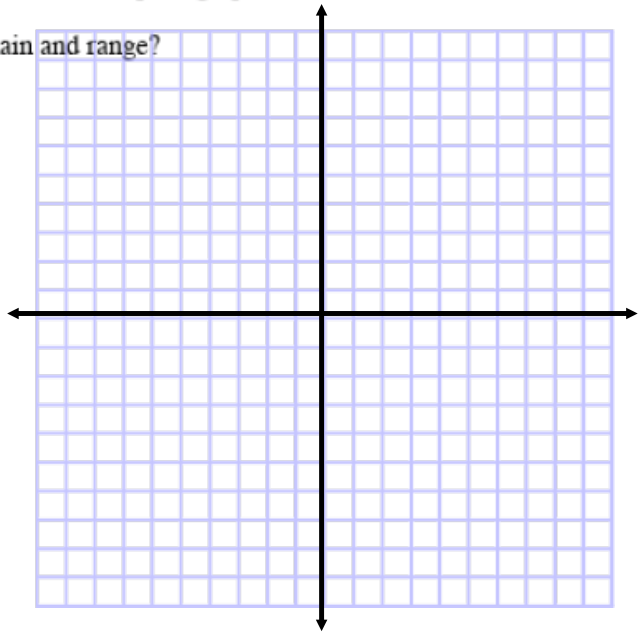
Remember that when you are asked to describe a function completely there are points of interest you must talk about.

1-28. Use your graphing calculator to help you draw a complete graph of $y = (x+1)(x-9)$.

a. Describe the graph completely.

b. What window settings allow you to see the complete graph?

c. How are the settings related to domain and range?

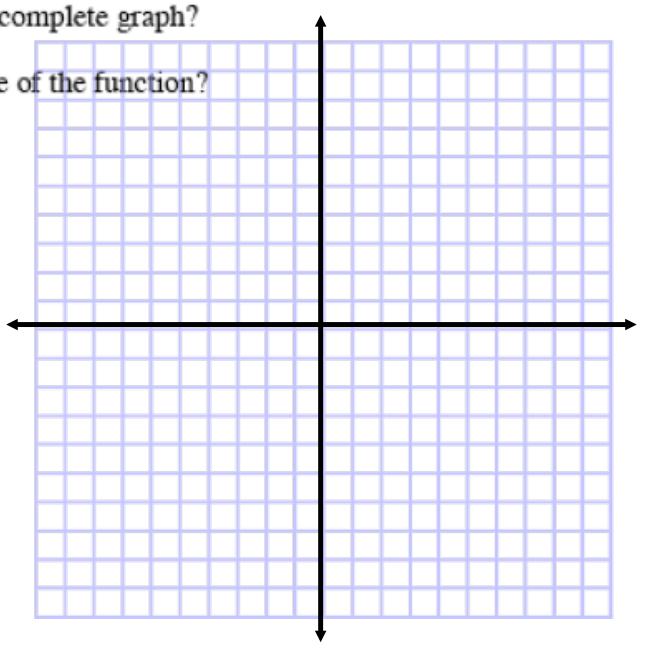


1-29. Draw a complete graph of $y = (x-12)^2 + 11$.

a. What happens when you use the standard window?

b. What window settings did you use to see enough of the graph to help you visualize and draw a complete graph?

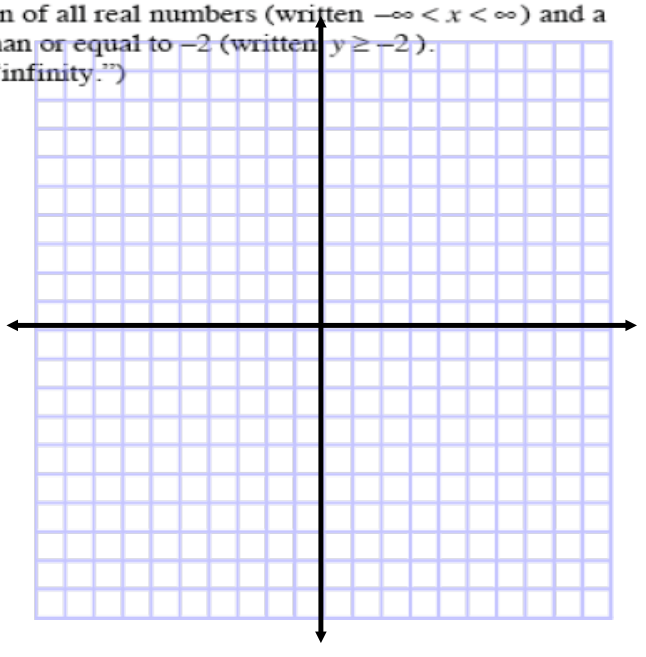
c. What are the domain and range of the function?



1-30. Now you will **reverse** your thinking to create a graph with a given domain and range.

a. Sketch a relation that has a domain of all numbers between and including -3 and 10 (written $-3 \le x \le 10$) and a range of all numbers between and including -4 and 6 (written $-4 \le y \le 6$). You do not have to write an equation for your relation. Verify your endpoints with your team. Be creative.

b. Sketch a relation with a domain of all real numbers (written $-\infty < x < \infty$) and a range of all numbers greater than or equal to -2 (written $y \ge -2$). (Note: The symbol ∞ means "infinity.")



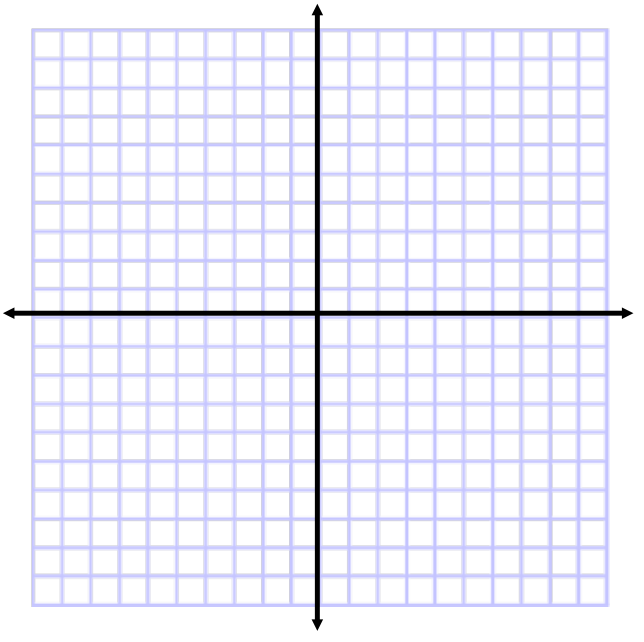
1-32 Sketch graph $f(x) = x + \frac{1}{(x+3)^2} - 3$

find points of interest and

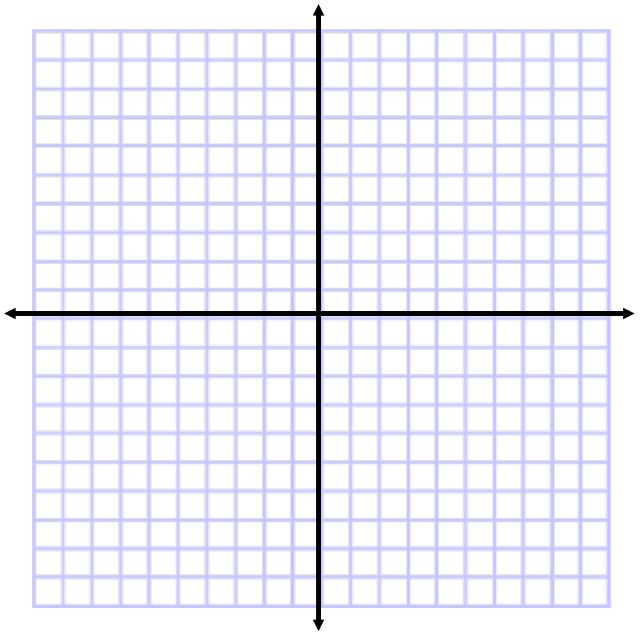
Mapping:

Domain:

Range:



1-33. Use your graphing calculator to help you sketch the graphs of $y=\frac{1}{x}-4$ and $y=\frac{1}{x-4}$. Are the graphs the same? Should they be? Explain why or why not.

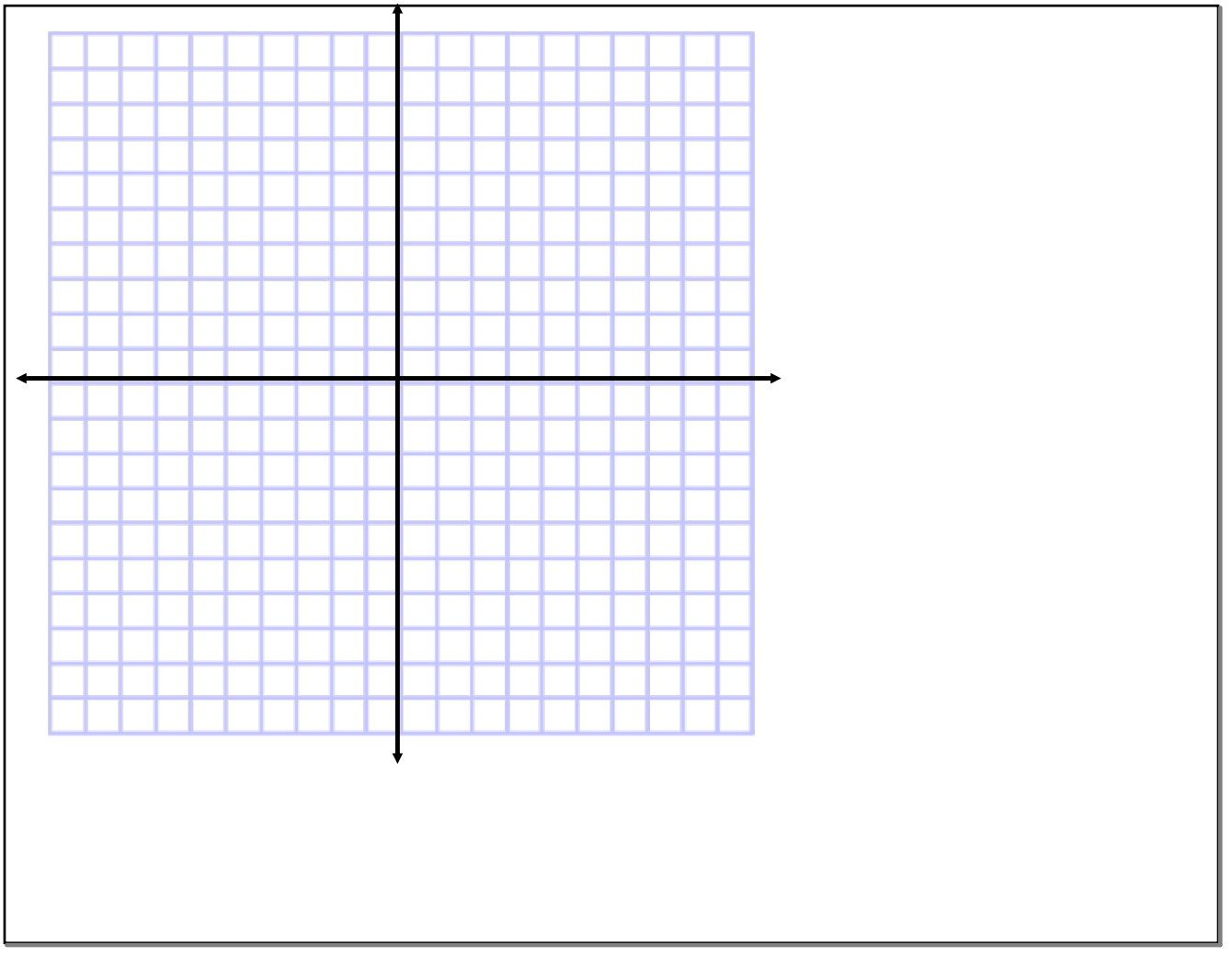
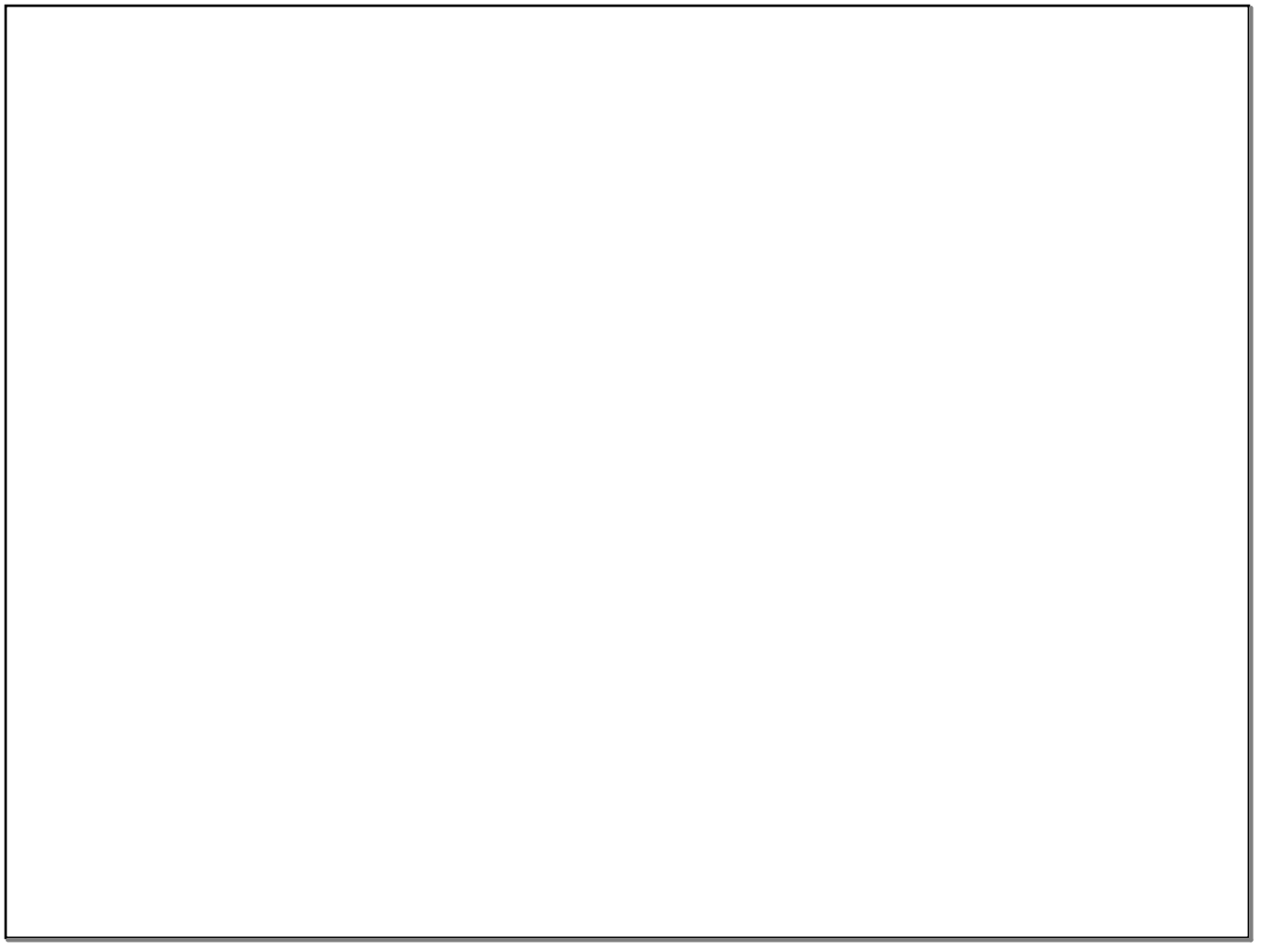


Goals:

Can you identify and write domain and range for some relation?

HW 1-35 to 1-41

September 13, 2018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