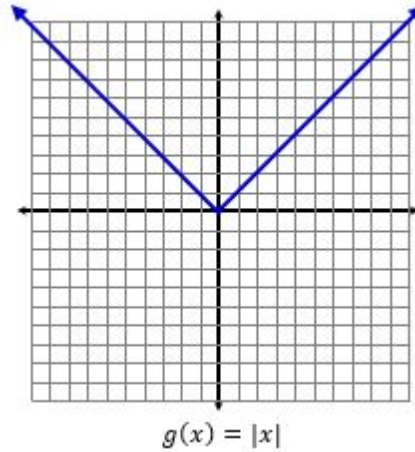
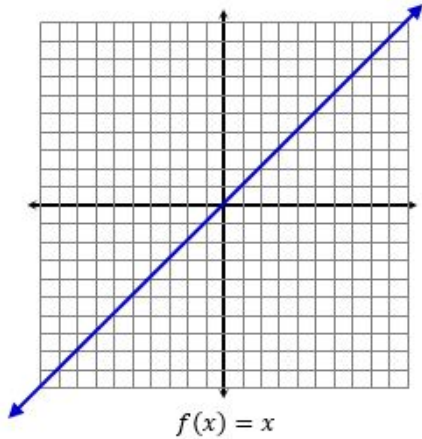


Math 1314 – College Algebra

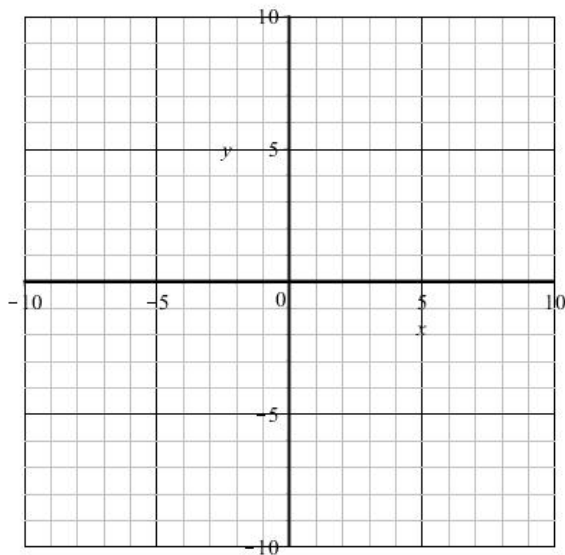
Section 3.6 Absolute Value Functions

- Recall: The absolute value of a real number x , denoted $|x|$ is given by $|x| = \begin{cases} -x & \text{if } x < 0 \\ x & \text{if } x \geq 0 \end{cases}$
- Consider the graphs of $f(x) = x$ and $g(x) = |x|$ below.



- How can the the graph of $f(x) = x$ be used to derive the graph of $g(x) = |x|$?
Consider the y -values that are positive and 0 and keep those points (this is the x -intercept and all points of the line above the x -axis). Reflect any points where the y -value is negative across the x -axis (think: flip the "negative tail")

Ex: Graph $g(x) = \left| 2 - \frac{2}{3}x \right|$. Give the domain and range.



Domain:
Range:

Ex: On the axes above, also graph $j(x) = \left| 2 - \frac{2}{3}x \right| + 3$

Ex: Find the x -intercept(s) and y -intercept of $j(x) = \left|2 - \frac{2}{3}x\right| + 3$.

- Will every function have an x -intercept?
Will every function have an y -intercept?