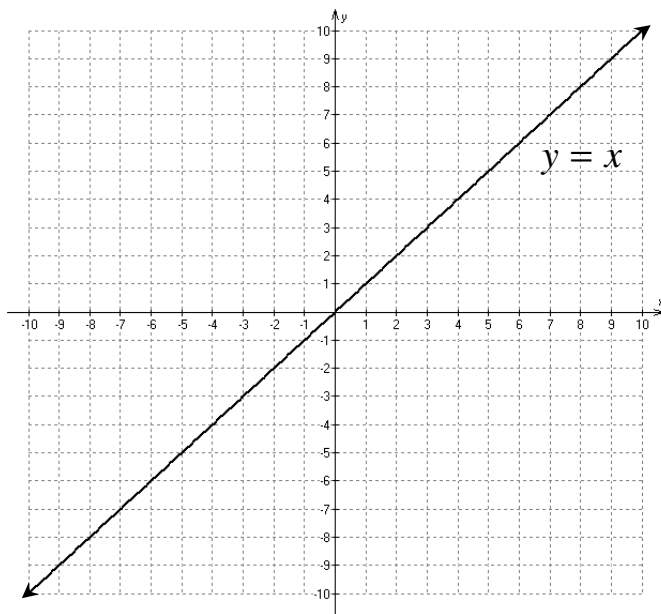


SUMMARY OF BASE FUNCTIONS



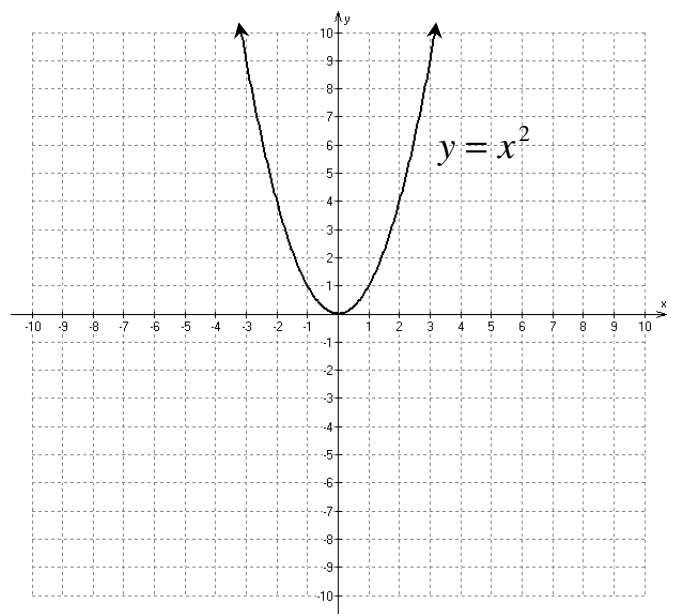
FUNCTION: $y = x$

DOMAIN: $\{x \in \mathcal{R}\}$

RANGE: $\{y \in \mathcal{R}\}$

COMMENTS:

- It's a straight line!
- For every point on the line, the x coordinate is equal to the y coordinate.



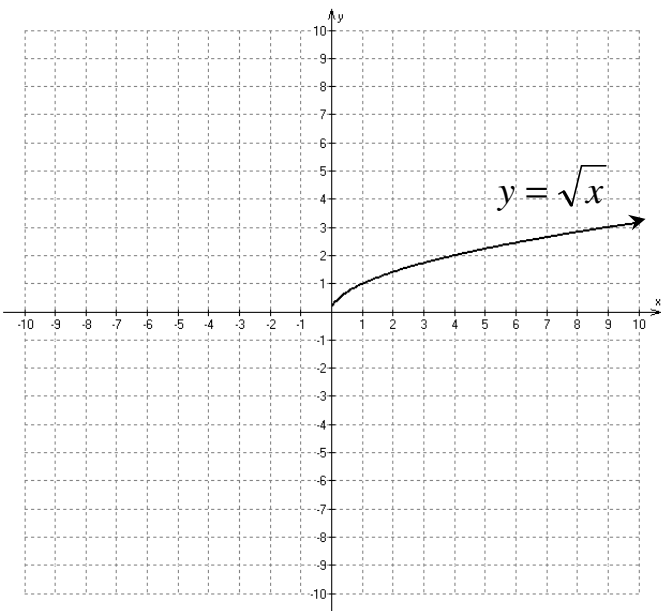
FUNCTION: $y = x^2$

DOMAIN: $\{x \in \mathcal{R}\}$

RANGE: $\{y \in \mathcal{R} \mid y \geq 0\}$

COMMENTS:

- It's a parabola!
- The vertex is $(0,0)$.

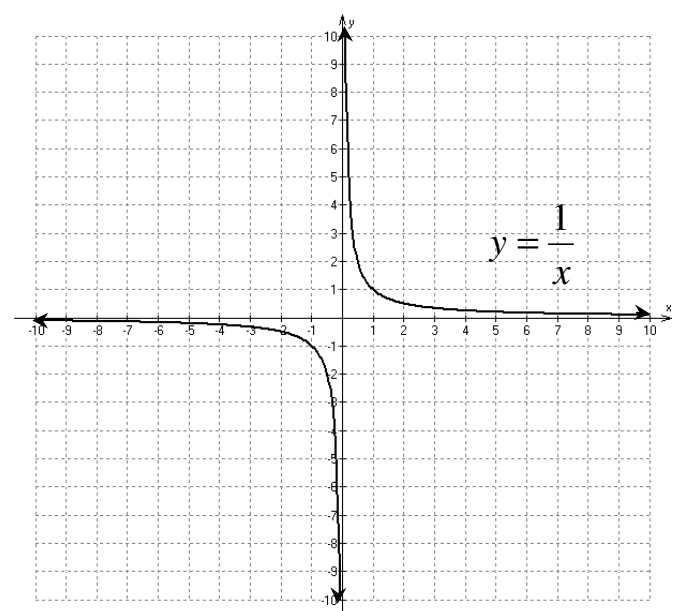


FUNCTION: $y = \sqrt{x}$

DOMAIN: $\{x \in \mathcal{R} \mid x \geq 0\}$

RANGE: $\{y \in \mathcal{R} \mid y \geq 0\}$

COMMENTS: The graph appears only in the first quadrant, since \sqrt{x} is defined only for $x \geq 0$ and is defined as the positive square root.



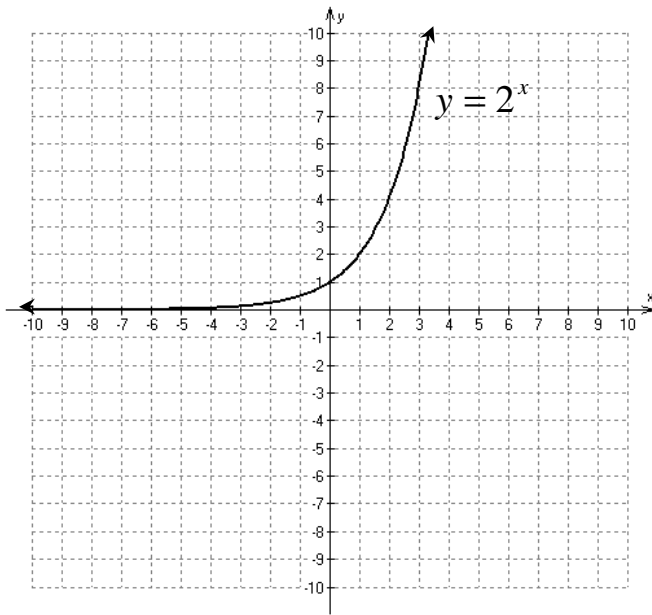
FUNCTION: $y = \frac{1}{x}$

DOMAIN: $\{x \in \mathcal{R} \mid x \neq 0\}$

RANGE: $\{y \in \mathcal{R} \mid y \neq 0\}$

COMMENTS:

- The graph never touches the axes.
- The lines $x = 0$ and $y = 0$ are asymptotes.
- The graph is discontinuous at $x = 0$.

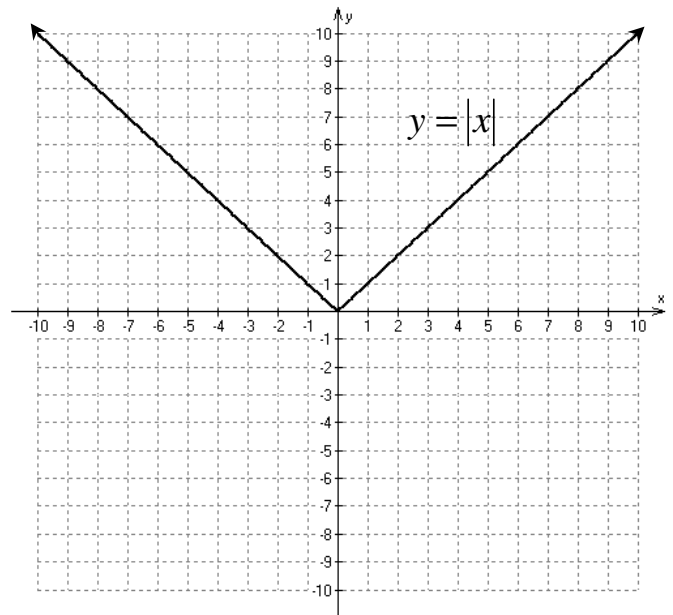


FUNCTION: $y = 2^x$

DOMAIN: $\{x \in \mathbb{R}\}$

RANGE: $\{y \in \mathbb{R} \mid y > 0\}$

COMMENTS: - The function decreases if the base is between 0 and 1.
- The line $y = 0$ is an asymptote.

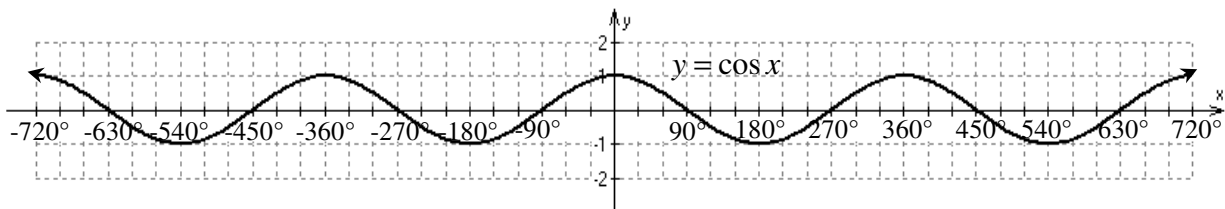
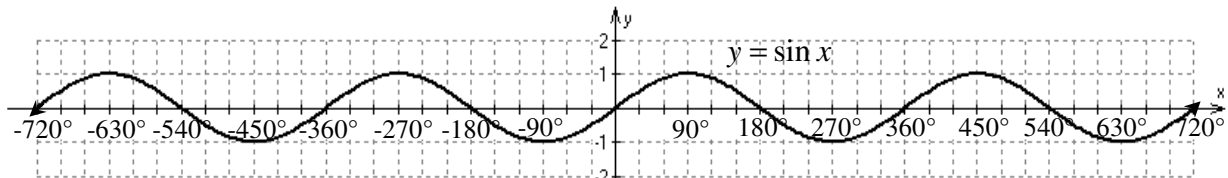


FUNCTION: $y = |x|$

DOMAIN: $\{x \in \mathbb{R}\}$

RANGE: $\{y \in \mathbb{R} \mid y \geq 0\}$

COMMENTS: It's absolutely fantastic.



FUNCTIONS: $y = \sin x$ AND $y = \cos x$

DOMAIN: $\{x \in \mathbb{R}\}$

RANGE: $\{y \in \mathbb{R} \mid -1 \leq y \leq 1\}$

COMMENTS: The period is 360° .