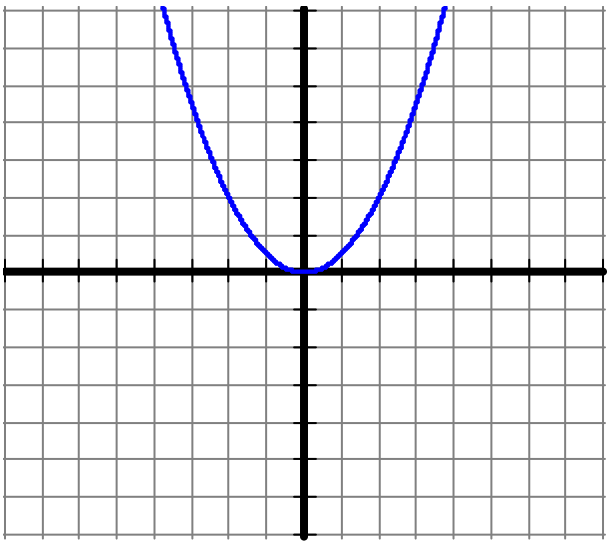
Homework 14 ANSWERS – Graphs of Dilations and Compressions
Precalculus – Mr. Oberle

Sketch each of the following graphs. Describe the domain and range of the function.

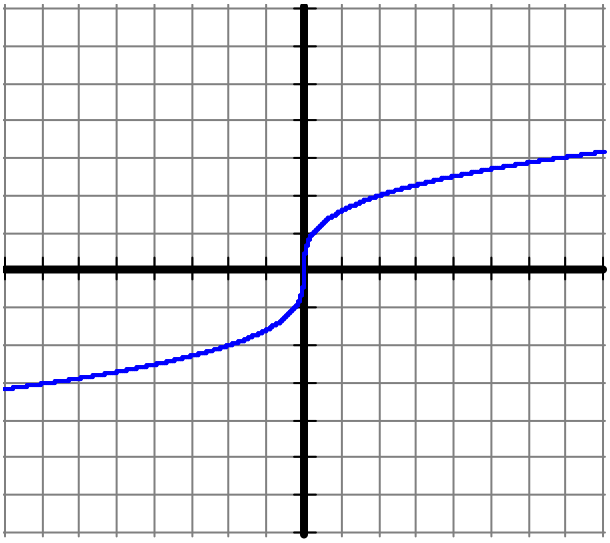
1. $y = \frac{1}{2}x^2$



Domain: $\mathbb{R}$

Range: $y \geq 0$

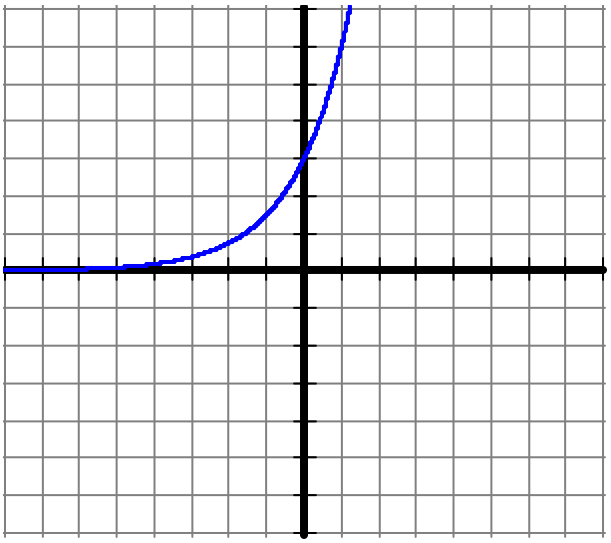
2. $y = \sqrt[3]{4x}$



Domain: $\mathbb{R}$

Range: $\mathbb{R}$

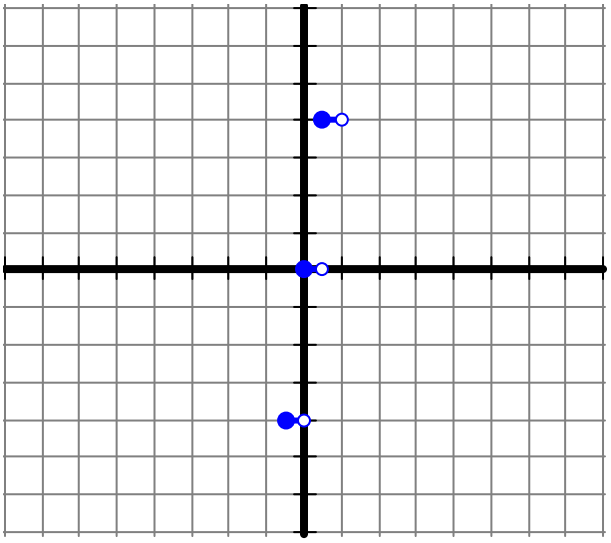
3. $y = 3 \cdot 2^x$



Domain: $\mathbb{R}$

Range: $y > 0$

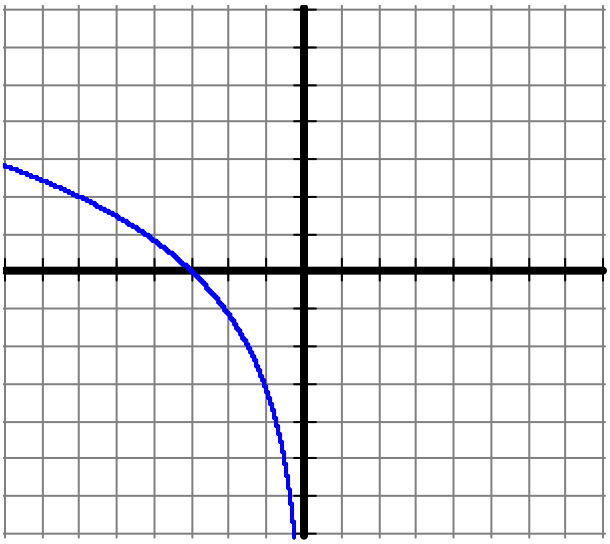
4. $y = 4\lfloor 2x \rfloor$



Domain: $\mathbb{R}$

Range: $\{4k \mid k \in \mathbb{Z}\}$

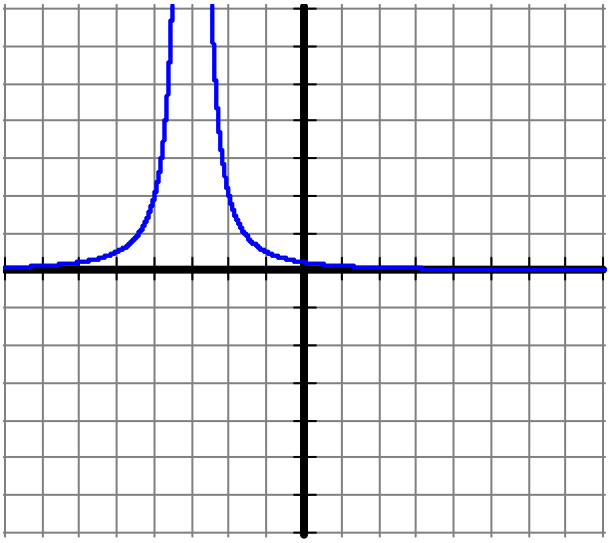
5. $y = 2\log_2\left(-\frac{x}{3}\right)$



Domain: $x < 0$

Range: $\mathbb{R}$

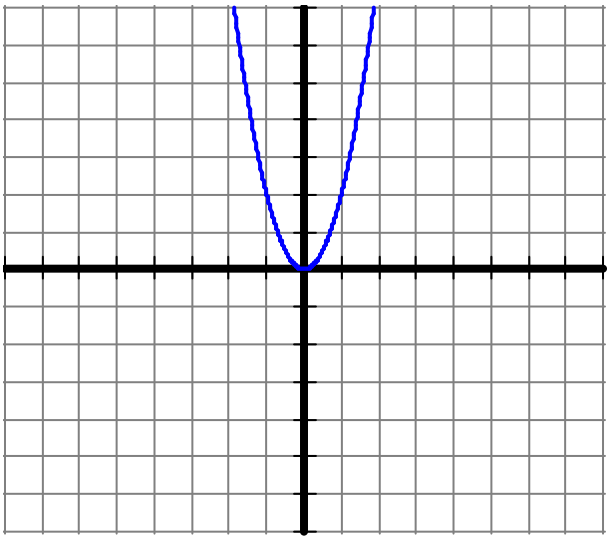
6. $y = \frac{2}{(x+3)^2}$



Domain: $x \neq -3$

Range: $y > 0$

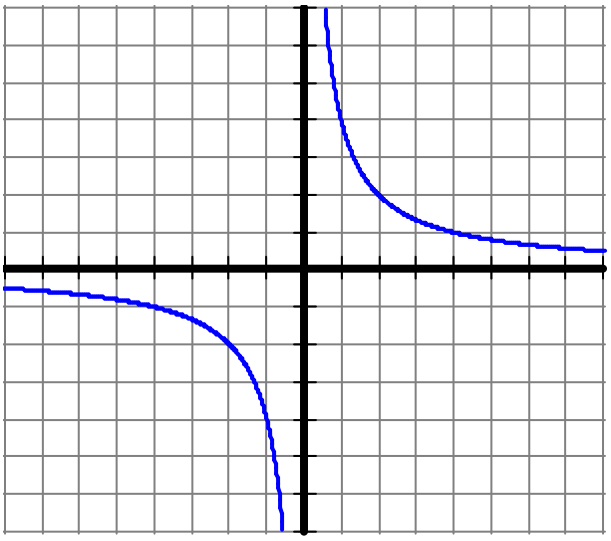
Write the formula for each of the following graphs. Describe the domain and range of the function, and find the asymptotes when appropriate.



7. $y = 2x^2$

Domain: $\mathbb{R}$

Range: $y \geq 0$

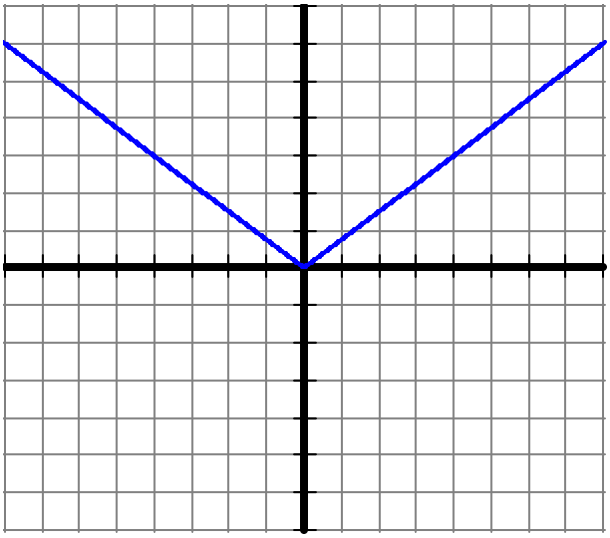


8. $y = \frac{4}{x}$

Domain: $x \neq 0$

Range: $y \neq 0$

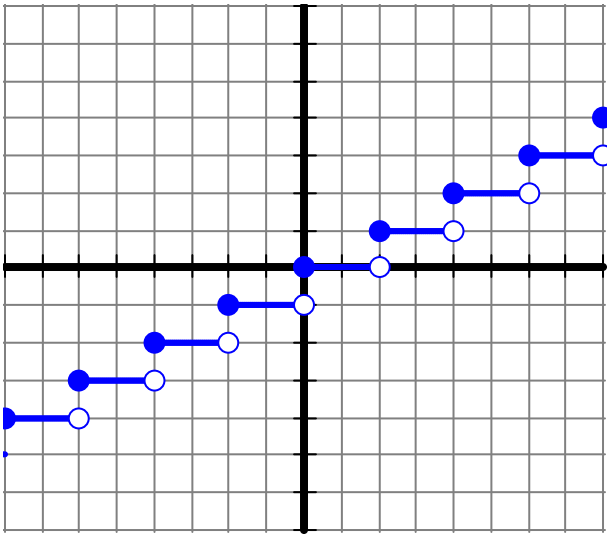
Asymptotes: $x = 0, y = 0$



9. $y = \frac{3}{4}|x|$

Domain: $\mathbb{R}$

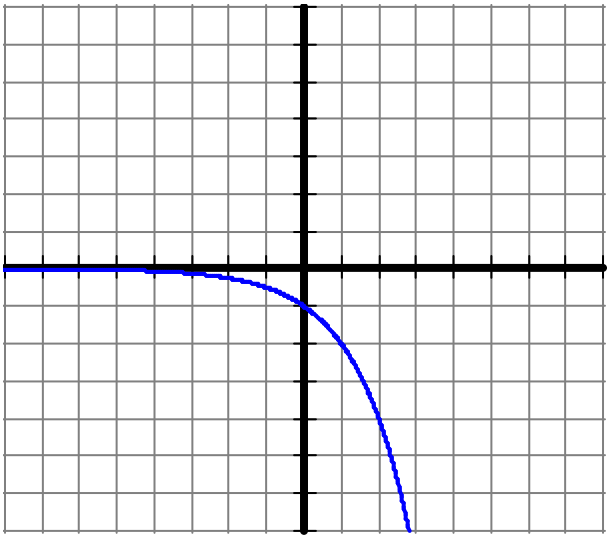
Range: $y \geq 0$



11. $y = \left\lfloor \frac{1}{2}x \right\rfloor$

Domain: $\mathbb{R}$

Range: $\mathbb{Z}$

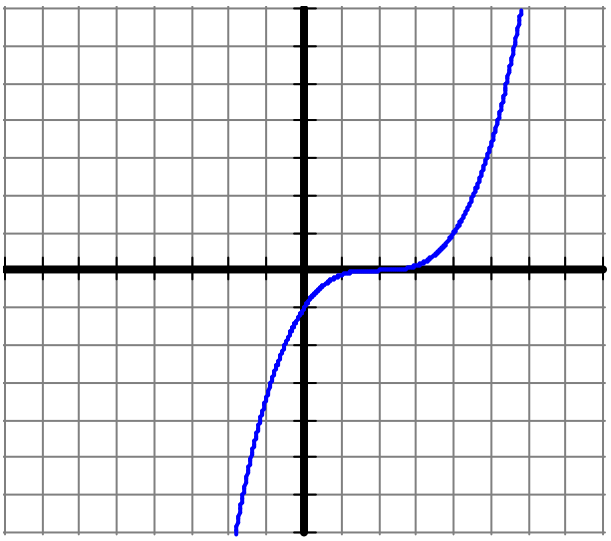


10. $y = -2^x$

Domain: $\mathbb{R}$

Range: $y < 0$

Asymptote: $y = 0$



12. $y = \left(\frac{1}{2}(x-2)\right)^3$

Domain: $\mathbb{R}$

Range: $\mathbb{R}$