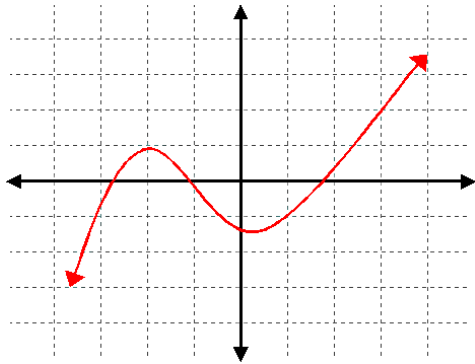


Objective: To match key features to graphs.

Warm Up: Complete the end behavior for each of the functions:

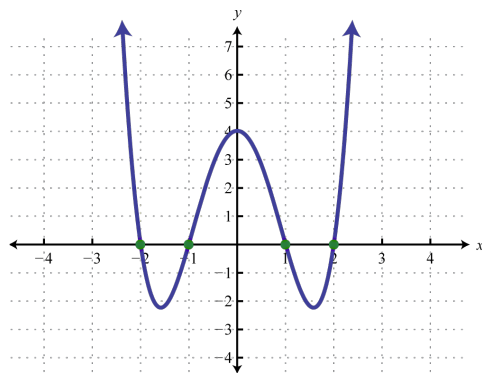
a.



As $x \rightarrow \infty, f(x) \rightarrow$
(Where does the graph go to on the right side of the graph?)

As $x \rightarrow -\infty, f(x) \rightarrow$
(Where does the graph go to on the left side of the graph?)

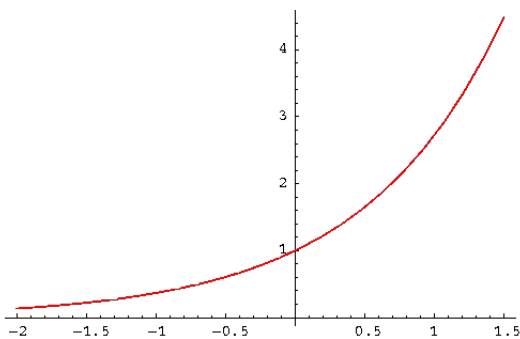
b.



As $x \rightarrow \infty, f(x) \rightarrow$

As $x \rightarrow -\infty, f(x) \rightarrow$

c.



As $x \rightarrow \infty, f(x) \rightarrow$

As $x \rightarrow -\infty, f(x) \rightarrow$

Practice: Below is a list of key features. Determine which key features apply to the various equations. You may want to use your calculator to help you. Hint: the key features will be used more than once and the equations will have multiple answers.

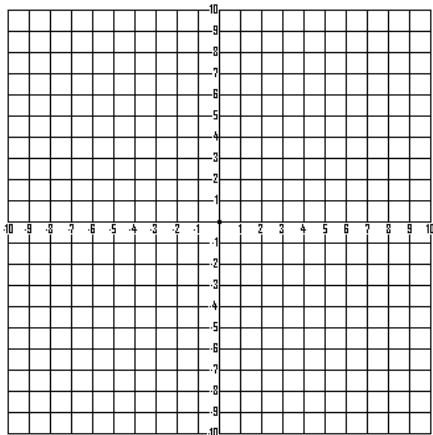
A One maximum	B As $x \rightarrow \infty, f(x) \rightarrow -\infty$ As $x \rightarrow -\infty, f(x) \rightarrow -\infty$	C 3 x-intercepts	D Odd function
E One relative maximum	F 4 x-intercepts	G Even function	H As $x \rightarrow \infty, f(x) \rightarrow \infty$ As $x \rightarrow -\infty, f(x) \rightarrow \infty$
I As $x \rightarrow \infty, f(x) \rightarrow \infty$ As $x \rightarrow -\infty, f(x) \rightarrow -\infty$	J One relative minimum	K One minimum	L One x-intercept
M No x-intercepts	N No y-intercepts	O As $x \rightarrow \infty, f(x) \rightarrow -\infty$ As $x \rightarrow -\infty, f(x) \rightarrow \infty$	P 2 x-intercepts

- _____ 1. $a(x) = 0.5x^3$
- _____ 2. $b(x) = |x - 1|$
- _____ 3. $c(x) = \log 7x - 1$
- _____ 4. $d(x) = 3x^2 - 4x + 2$
- _____ 5. $e(x) = \ln x$
- _____ 6. $f(x) = 3^x - 2x - 6$
- _____ 7. $g(x) = x^3 + 2x^2 - 2x - 1$
- _____ 8. $h(x) = \left| \frac{1}{x} \right|$
- _____ 9. $i(x) = -2x^5 + 2x^3 + 5x - 1$
- _____ 10. $j(x) = \frac{3}{x} + x$
- _____ 11. $k(x) = -3x^2 + 2$

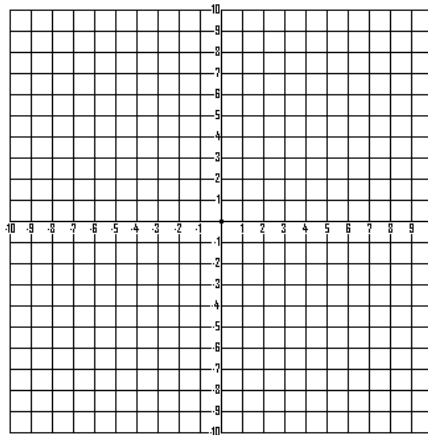
Objective: To review how to graph linear, quadratic, and exponential functions by hand.

Example 1: Graph each of the following equations

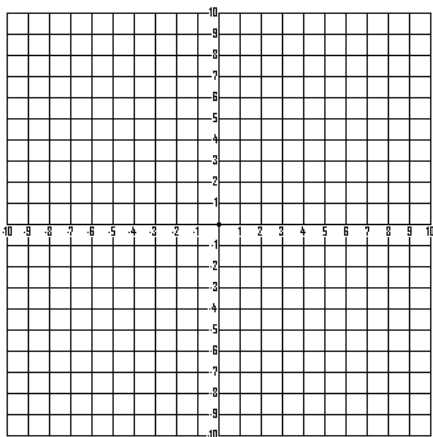
a. $y = \frac{2}{3}x - 6$



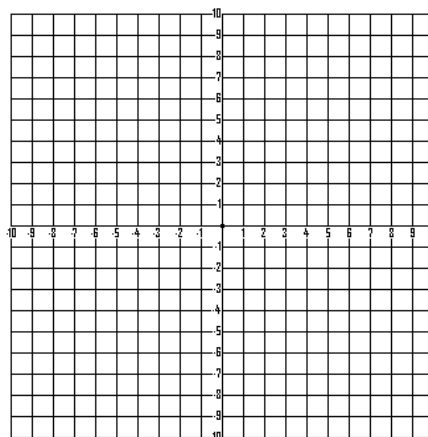
b. $g(x) = -3(x - 5)^2 + 4$



c. $f(x) = 3^x$

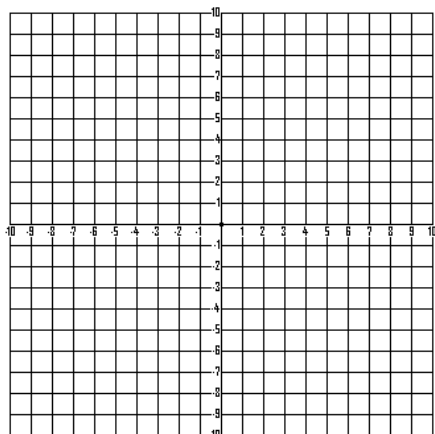


d. $y + 3 = x + 8$

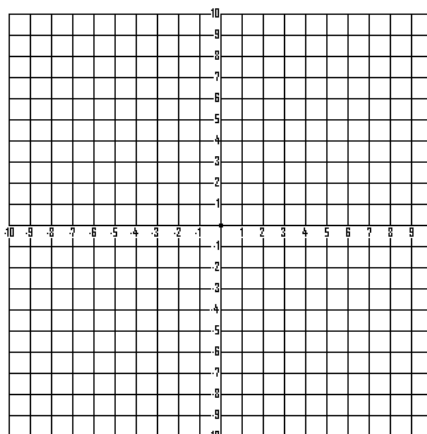


Practice: Graph each of the following

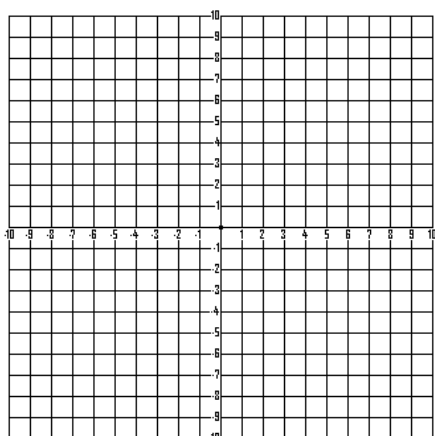
1. $y + 4x = 5$



2. $f(x) = 4(x + 3)^2 + 1$



3. $h(x) = 4^x - 7$



4. $y - 6 = (x - 1)^2$

