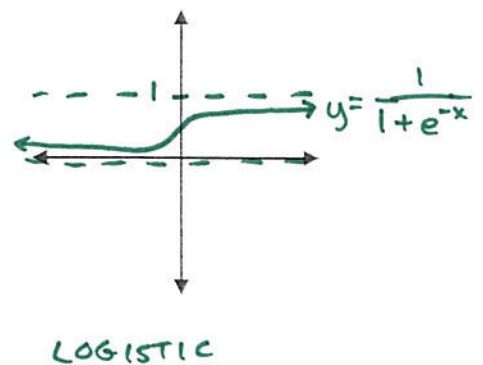
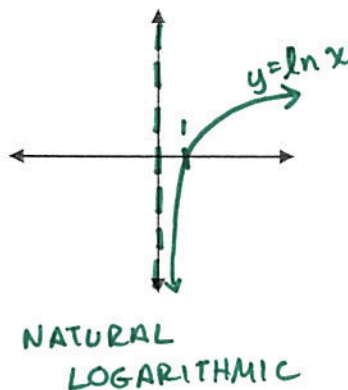
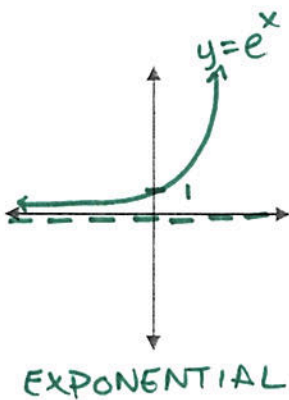
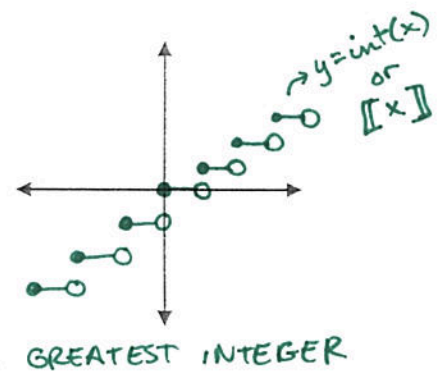
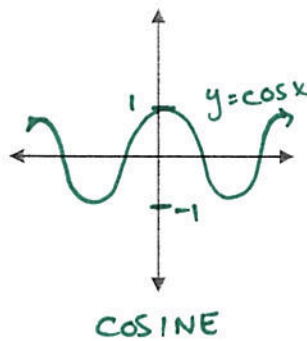
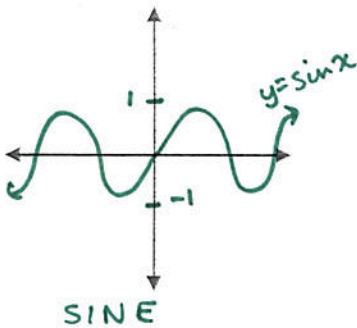
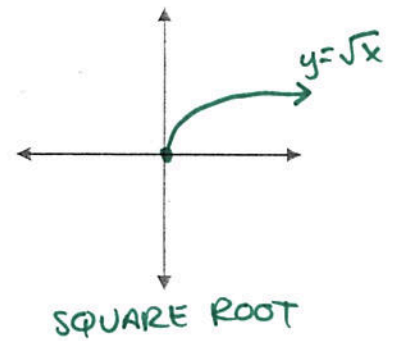
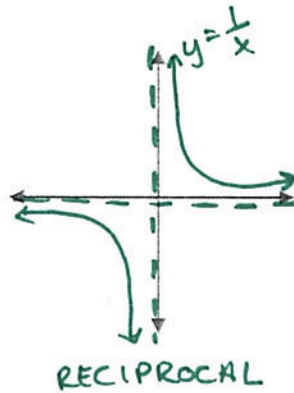
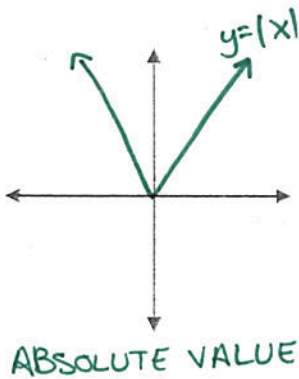
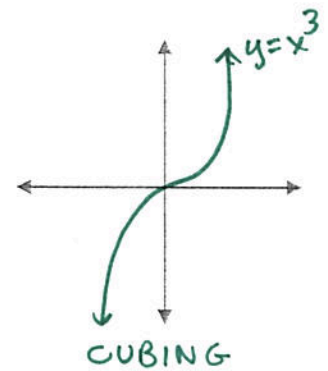
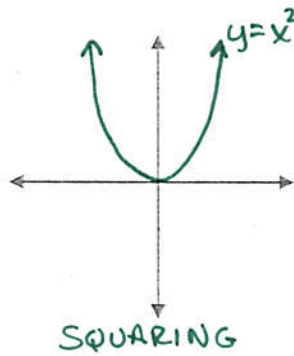
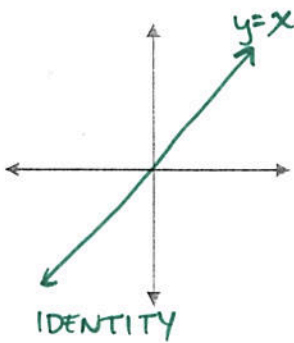


DATE: _____

Parent Functions

Draw a sketch of each of the parent functions below:



Identify the name or equation of the parent function(s) that meet each condition:

<p>a) Domain: $(-\infty, \infty)$ $y = x$, $y = x^2$, $y = x^3$, $y = x$, $y = \sin x$, $y = \cos x$, $y = e^x$, $y = \frac{1}{1+e^{-x}}$</p>	<p>b) Range: $[0, \infty)$ $y = x^2$, $y = x$, $y = \sqrt{x}$</p>
<p>c) Range: $(-\infty, \infty)$ $y = x$, $y = x^3$, $y = \ln x$</p>	<p>d) Bounded above none <u>only</u> bounded above (but, $y = \sin x$, $y = \cos x$, $y = \frac{1}{1+e^{-x}}$ bounded above <u>AND</u> below)</p>
<p>e) Bounded below $y = x^2$, $y = x$, $y = \sqrt{x}$, $y = e^x$</p>	<p>f) Not Bounded $y = x$, $y = x^3$, $y = \frac{1}{x}$, $y = \text{int}(x)$, $y = \ln x$</p>
<p>g) Continuous on its domain $y = x$, $y = x^2$, $y = x^3$, $y = x$, $y = \sqrt{x}$, $y = \sin x$, $y = \cos x$, $y = e^x$, $y = \ln x$, $y = \frac{1}{1+e^{-x}}$</p>	<p>h) Not continuous on its domain $y = \frac{1}{x}$, $y = \text{int}(x)$</p>
<p>i) Decreasing on $(-\infty, 0)$ $y = x^2$, $y = x$, $y = \frac{1}{x}$,</p>	<p>j) Always increasing $y = x$, $y = x^3$, $y = \sqrt{x}$, $y = e^x$, $y = \frac{1}{1+e^{-x}}$</p>
<p>k) End Behavior: $\lim_{x \rightarrow -\infty} f(x) = \infty$ $\lim_{x \rightarrow \infty} f(x) = \infty$ $y = x^2$, $y = x$</p>	<p>l) End Behavior: $\lim_{x \rightarrow -\infty} f(x) = 0$ $\lim_{x \rightarrow \infty} f(x) = \infty$ $y = e^x$</p>
<p>m) Vertical Asymptote at $x = 0$ $y = \frac{1}{x}$</p>	<p>n) No Horizontal Asymptote $y = x$, $y = x^2$, $y = x^3$, $y = x$, $y = \sqrt{x}$, $y = \sin x$, $y = \cos x$, $y = \text{int}(x)$ $y = \ln x$</p>
<p>o) Odd function $y = x$, $y = x^3$, $y = \frac{1}{x}$, $y = \sin x$</p>	<p>p) Neither even nor odd function $y = \sqrt{x}$, $y = \text{int}(x)$, $y = e^x$, $y = \ln x$, $y = \frac{1}{1+e^{-x}}$</p>