

Post Test
 Calendar Math Review
 4.1 Parent Functions

Oct 21-8:24 PM

$Q_3 - Q_2 =$
 $60 - 48 =$
 $60 - 20 = 40$

Oct 27-8:13 AM

End Behavior: what direction the end of the graph is going.
Domain: all possible values of x.
Range: all possible values of y
Vertical Asymptotes: a place on a graph where it is undefined vertically. Usually where there is a zero in the denominator.
Horizontal Asymptotes: a line on the graph that goes horizontal.
Continuity: you don't have to lift your pencil to graph the function.

$\lim_{x \rightarrow -\infty} f(x) =$ $\lim_{x \rightarrow \infty} f(x) =$

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X-intercepts: where the graph crosses the x-axis. $(x, y) (x, 0)$
Y-intercepts: where the graph crosses the y-axis. $(x, y) (0, y)$
Increasing: where the graph is going "up hill".
 X-values interval
Decreasing: where the graph is going "down hill".
 X-values interval
Positive: where the graph is above the x-axis.
 X-values interval
Negative: where the graph is below the x-axis.
 X-values interval
Relative Max: high point.
Relative Min: low point.

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Symmetry:
Odd: must go through the origin. Creates the same picture upside down.

Even: creates a mirror image if folded over the y-axis.

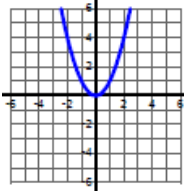
Oct 21-9:03 PM

Parent Functions and their key features
 Linear Function: $f(x)=x$

 End behavior: $\lim_{x \rightarrow \infty} f(x) = \infty$ $\lim_{x \rightarrow -\infty} f(x) = -\infty$
 Domain: $(-\infty, \infty)$
 Range: $(-\infty, \infty)$
 Vertical/Horizontal Asymptote/s: none
 Continuity: continuous
 Intercepts: X: $(0, 0)$ Y: $(0, 0)$
 Increasing/Decreasing: $\uparrow (-\infty, \infty)$
 Positive/Negative: $\uparrow (-\infty, \infty)$
 Max/Min: none
 Symmetry: odd

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Quadratic: $f(x)=x^2$



End behavior:

Domain:

Range:

Vertical/Horizontal Asymptote/s:

Continuity:

Intercepts:

Increasing/Decreasing:

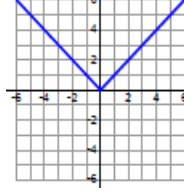
Positive/Negative:

Max/Min:

Symmetry:

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Absolute Value: $f(x) = |x|$



End behavior:

Domain:

Range:

Vertical/Horizontal Asymptote/s:

Continuity:

Intercepts:

Increasing/Decreasing:

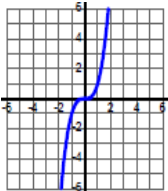
Positive/Negative:

Max/Min:

Symmetry:

Oct 21-9:32 PM

Cubic: $f(x) = x^3$



End behavior:

Domain:

Range:

Vertical/Horizontal Asymptote/s:

Continuity:

Intercepts:

Increasing/Decreasing:

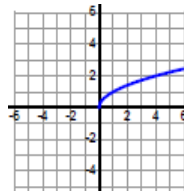
Positive/Negative:

Max/Min:

Symmetry:

Oct 21-9:44 PM

Square Root: $f(x)=\sqrt{x}$



End behavior:

Domain:

Range:

Vertical/Horizontal Asymptote/s:

Continuity:

Intercepts:

Increasing/Decreasing:

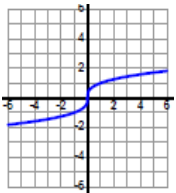
Positive/Negative:

Max/Min:

Symmetry:

Oct 21-9:47 PM

Cube Root: $f(x)=\sqrt[3]{x}$



End behavior:

Domain:

Range:

Vertical/Horizontal Asymptote/s:

Continuity:

Intercepts:

Increasing/Decreasing:

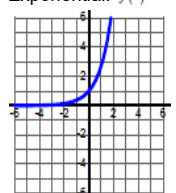
Positive/Negative:

Max/Min:

Symmetry:

Oct 22-9:14 AM

Exponential: $f(x)=e^x$



End behavior:

Domain:

Range:

Vertical/Horizontal Asymptote/s:

Continuity:

Intercepts:

Increasing/Decreasing:

Positive/Negative:

Max/Min:

Symmetry:

Oct 22-9:30 AM

Logarithmic: $f(x) = \ln x$

End behavior:
 $\lim_{x \rightarrow -\infty} f(x) = -\infty$ $\lim_{x \rightarrow \infty} f(x) = \infty$

Domain: $(0, \infty)$

Range: $(-\infty, \infty)$

Vertical/Horizontal Asymptote/s:
 $\sqrt{\emptyset}$

Continuity: yes, continuous

Intercepts:
 $X \bullet (1, 0)$ $Y \bullet \text{none}$

Increasing/Decreasing:
 $\bullet (0, \infty)$

Positive/Negative:
 $P \bullet (1, \infty)$ $N \bullet (0, 1)$

Max/Min:
 none

Symmetry: neither

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Sine: $f(x) = \sin x$ $\sin x$

End behavior:

Domain:

Range:

Vertical/Horizontal Asymptote/s:

Continuity:

Intercepts:

Increasing/Decreasing:

Positive/Negative:

Max/Min:

Symmetry:

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Cosine: $f(x) = \cos x$ $\cos x$

End behavior:

Domain:

Range:

Vertical/Horizontal Asymptote/s:

Continuity:

Intercepts:

Increasing/Decreasing:

Positive/Negative:

Max/Min:

Symmetry:

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Step: $f(x) = \text{int}[x]$ $\text{int}[x]$

End behavior:
 $\lim_{x \rightarrow -\infty} f(x) = -\infty$ $\lim_{x \rightarrow \infty} f(x) = \infty$

Domain: $(-\infty, \infty)$

Range: $(-\infty, \infty)$

Vertical/Horizontal Asymptote/s:
 none

Continuity:
 not continuous, no

Intercepts:
 $X \bullet (0, 0) \cup (1, 0)$ $Y \bullet (0, -1) \cup (0, 0)$

Increasing/Decreasing:
 $(-\infty, \infty)$

Positive/Negative:
 $N \bullet (-\infty, 0)$ $P \bullet (0, \infty)$

Max/Min:
 none

Symmetry: odd $(1, 1)$ $(-1, -1)$

Oct 22-9:46 AM