Name of Graph: $\qquad$

Equation: $\qquad$

| $x$ | $f(x)$ |
| :--- | :--- |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |



## Key Features

| Domain: | Positive: |
| :--- | :--- |
| Range: | Negative: |
| $x$-intercept(s): | Maximums /Minimums |
| $y$-intercept: | Symmetry: |
| Increasing: | End Behavior: |
| Decreasing: | $\lim _{x \rightarrow-\infty} f(x)=$ |
| Constant: | $\lim _{x \rightarrow \infty} f(x)=$ |
| Amplitude: | Phase Shift: |
| Period: | Vertical Shift: |
|  | Midline: |

Positive:
Negative:
Maximums /Minimums
Symmetry:
End Behavior:

$$
\begin{aligned}
& \lim _{x \rightarrow-\infty} f(x)= \\
& \lim _{x \rightarrow \infty} f(x)=
\end{aligned}
$$

Phase Shift:

Vertical Shift:

Midline:

Cycle:
Transformation Equation:

## Parent Functions \#11

Name of Graph: $\qquad$

Equation: $\qquad$

| $x$ | $f(x)$ |
| :---: | :---: |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |



## Key Features

Domain:
Range:
$x$-intercept(s):
$y$-intercept:
Increasing:
Decreasing:
Constant:
Amplitude:

Period:

Positive:
Negative:
Maximums /Minimums
Symmetry:
End Behavior:

$$
\begin{aligned}
& \lim _{x \rightarrow-\infty} f(x)= \\
& \lim _{x \rightarrow \infty} f(x)=
\end{aligned}
$$

Phase Shift:
Vertical Shift:
Midline:

Cycle:
Transformation Equation:

## Steps for solving cosine equation:

1. Get cosine by itself-do inverse operations
2. Use "All Students Take Calculus" to draw triangles in correct quadrants
3. Label the sides of the triangles-adjacent over hypotenuse
4. Find the reference angle
5. Find the angles in standard position

Stop here if you are given an interval in the directions

EX. $2 \sqrt{3}-6 \cos x=5 \sqrt{3}$

## Steps for solving cosine equation:

1. Get cosine by itself-do inverse operations

$$
\text { EX. }-2 \cos x=\sqrt{2}
$$

2. Use "All Students Take Calculus" to draw triangles in correct quadrants
3. Label the sides of the triangles-adjacent over hypotenuse
4. Find the reference angle
5. Find the angles in standard position

Stop here if you are given an interval in the directions

EX. $2 \sqrt{3}-6 \cos x=5 \sqrt{3}$

