GRAPHING THE COSINE FUNCTION

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| x | *f(x)* = cos x |
| 0 |  |
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 **Characteristics of the cosine function:**

* + - * **Domain:**
			* **Range:**
			* **Absolute max:**
			* **Absolute min:**
			* **Symmetry:**
			* **Continuity:**
			* **Bounded/Unbounded**

AMPLITUDE AND VERTICAL SHIFTS

Graph each of the following functions. State the amplitude and the vertical shift.

1. $y=2\cos(θ-2)$ 2. $y=\frac{1}{2}\cos(θ)$ 3. $y=3\cos(θ+2)$ 4. $y=4\cos(θ-2)$



PERIOD AND PHASE SHIFTS

Graph the following functions. State the period, amplitude, phase shift and vertical shift if any.

1. $y=\cos(4θ)$ 2. $y=\cos(\frac{1}{3}θ)$ 3. $y=2\cos(2θ)$

4. $y=2\cos(\frac{1}{2}θ-1)$ 5. $y=3\cos((θ-π))$ 6. $y=\frac{1}{2}\cos((θ+\frac{π}{4}))$

7.$ y=\cos(\left(2θ-\frac{π}{4}\right))$ 8. $y=\cos(\left(3x+\frac{π}{2}\right)+1)$









