

Quiz #1

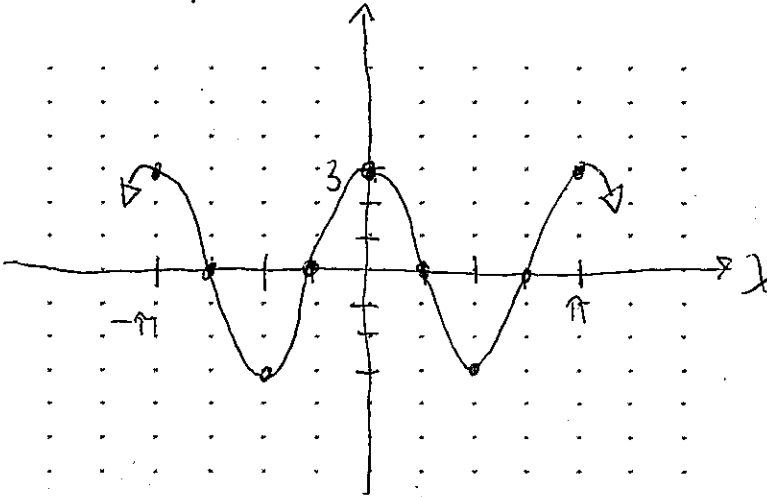
Directions: Please show all work since partial credit is give, and answers without the necessary work will receive no credit. Remember, have fun!

1. Find the amplitude and period of  $y = 3 \cos(2x)$ . Then sketch the graph showing at least two full periods.

+5

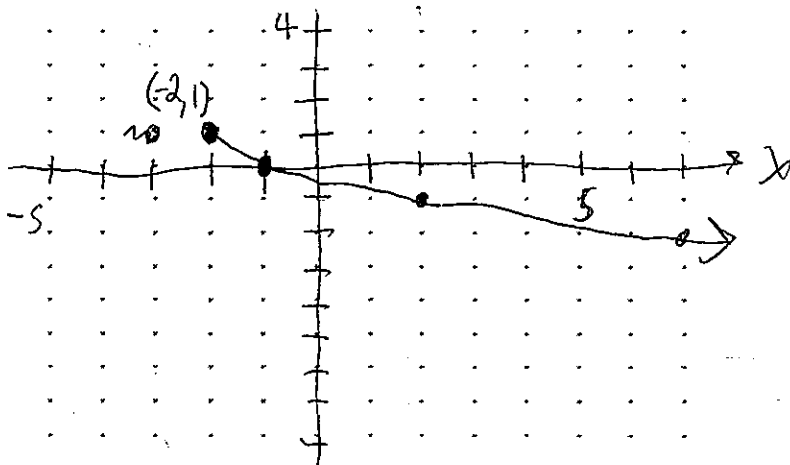
Amplitude: 3

Period:  $\pi$



2. Sketch the graph of  $y = 1 - \sqrt{x+2}$  as a transformation of a basic function.

+5



Toolkit  $y = \sqrt{x}$

- 1) Shift left 2 units
- 2) Reflect over x-axis
- 3) Shift up 1 unit

Domain:

Range:

+10

3. Compute the following limits.

+5 a)  $\lim_{x \rightarrow 3} (x^3 - 3x^2 + 9x) \underline{27}$

Continuous polynomial

$$\lim_{x \rightarrow 3} x^3 - 3x^2 + 9x = 3^3 - 3(3)^2 + 9(3) = 27$$

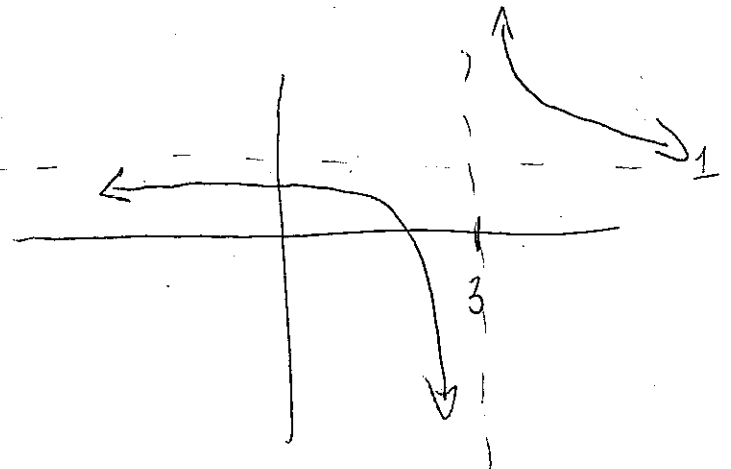
+5 b)  $\lim_{x \rightarrow 5} \frac{x^2 - 3x - 10}{x^2 - 10x + 25} \underline{DNE}$

$$\lim_{x \rightarrow 5} \frac{\cancel{(x-5)}(x+2)}{\cancel{(x-5)}(x-5)} = \lim_{x \rightarrow 5} \frac{x+2}{x-5}$$

4.9	5	5.1
-69	und	71

+5 c)  $\lim_{x \rightarrow 3^+} \frac{x}{x-3} \underline{-\infty}$

$$\frac{x}{x-3} = 1 + \frac{3}{x-3}$$



+15