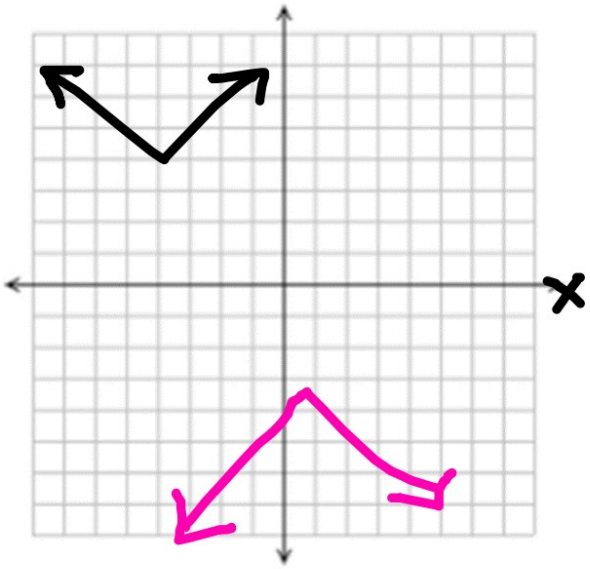
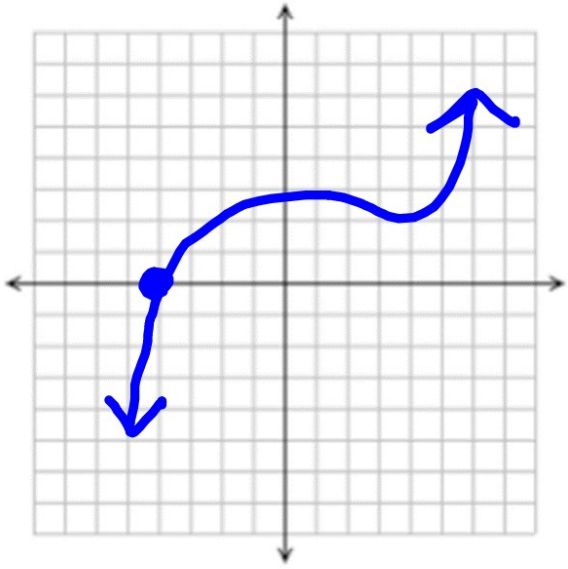
Sketch a graph that meets the given requirements listed below.

An Absolute function with Imaginary Roots (Non-Real)



An Cubic function with One Real Root



* Is the sequence arithmetic or geometric? Explain your reasoning.

$\frac{840}{525} = 1.6$

Geometric b/c Multiply by 1.6

1. → 525, 840, 1344, 2150.4, 3440.64,.... $\frac{1344}{840} = 1.6$

$\frac{2150.4}{1344} = 1.6$

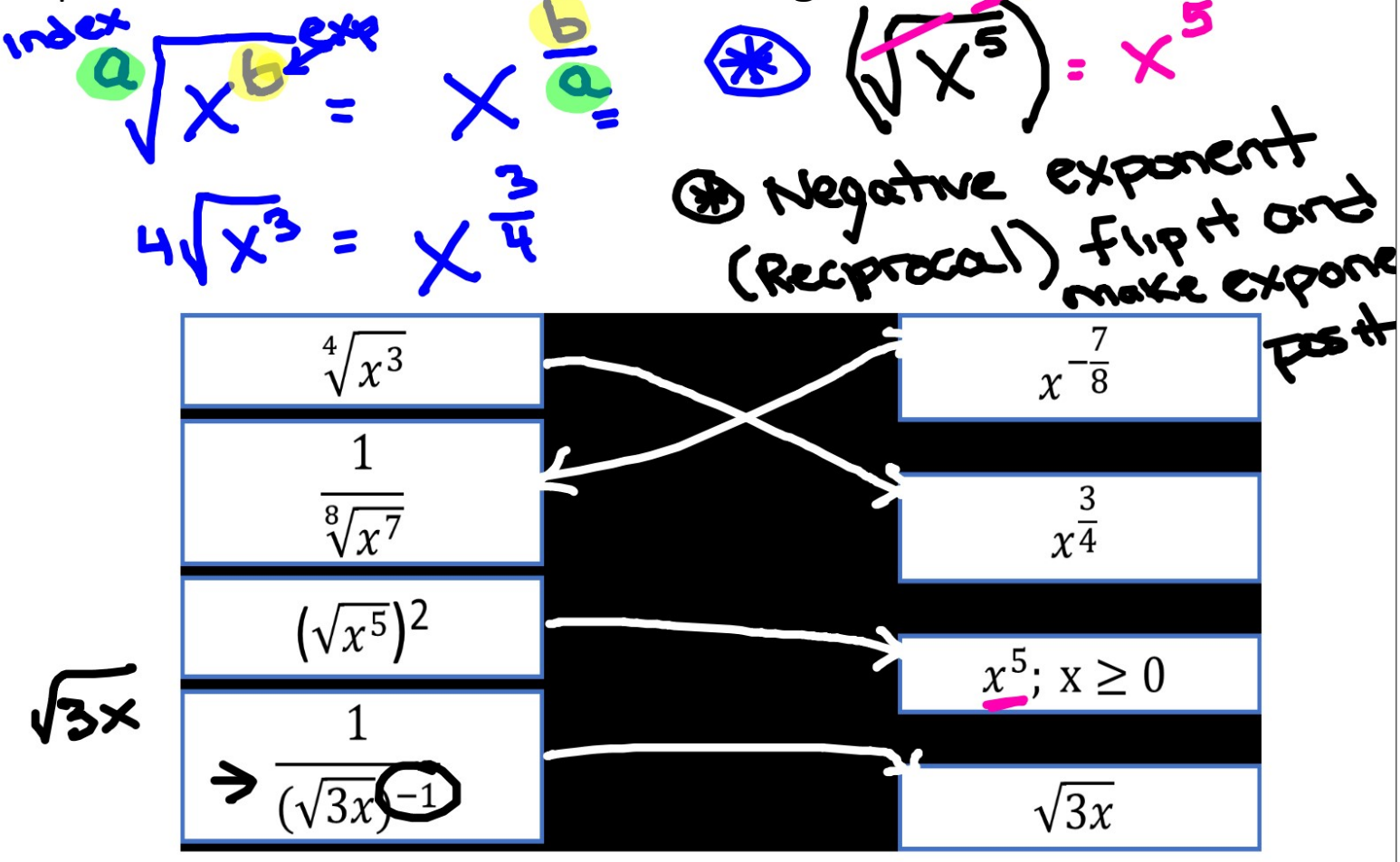
2. → 2400, 2800, 3200, 3600, 4000,....

$4000 - 3600 = 400$

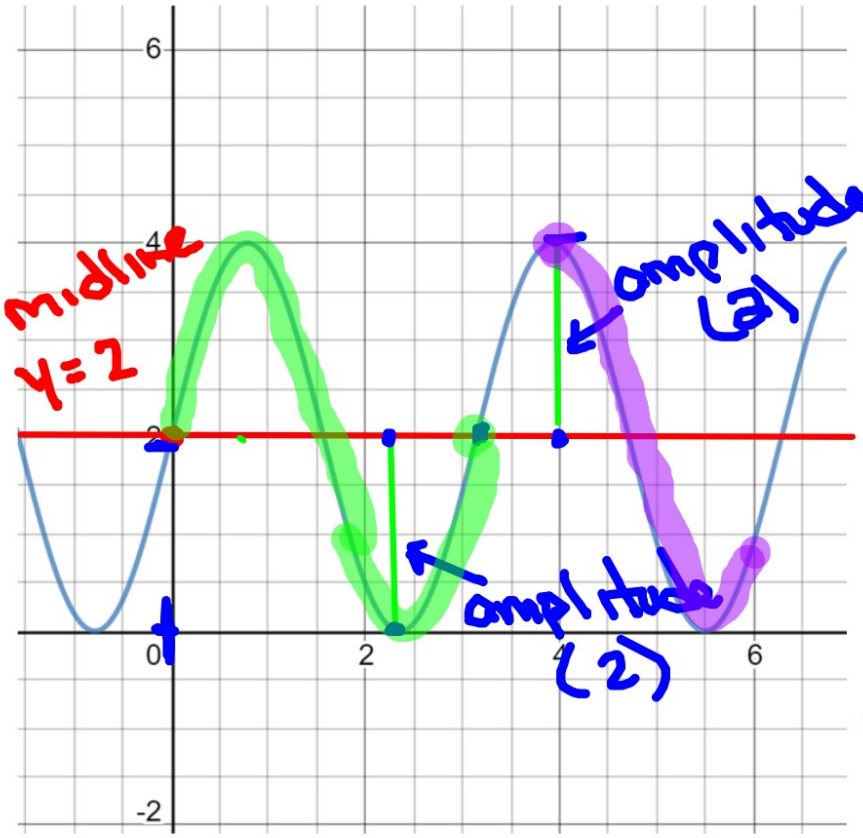
+400 +400 +400 +400

* ARITHMETIC B/C +400

Match each expression on the left with an equivalent expression from the list on the right.



Select all the statements that are true.



A. The amplitude of the function is 2.

B. The period is $\pi \approx 3.14$

C. The midline of the function is y = 4

D. The function increases over the interval $4 < x < 6$

DRILL

Multiply & Simplify

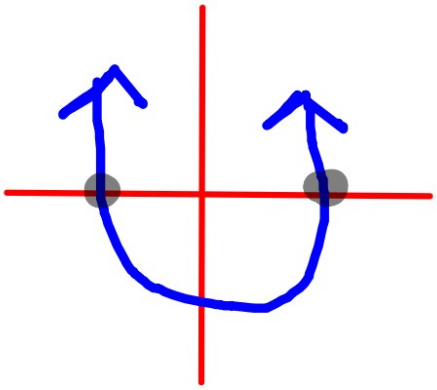
① $(2+3x)(4) = 8+12x$

② $(4+2x)(3-5x) = 12 - 20x + 6x$

$= 12 - 14x - 10x^2$

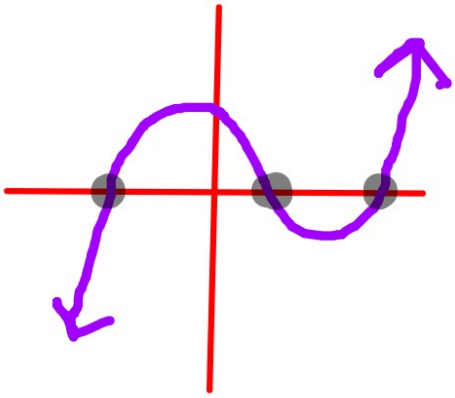
$= -10x^2 - 14x + 12$

Quadratic

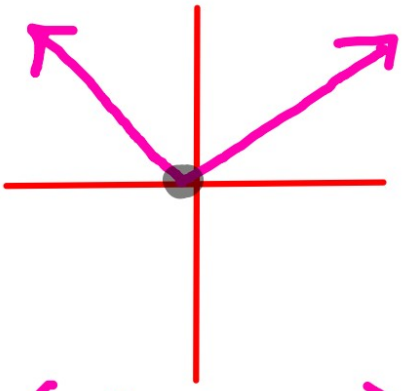


(U-shape)

Cubic

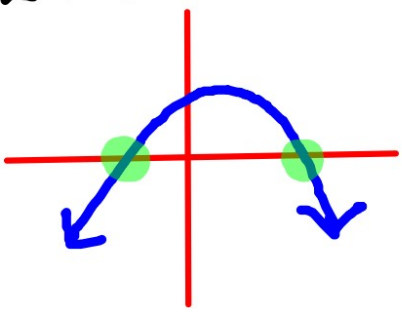


Absolute Value

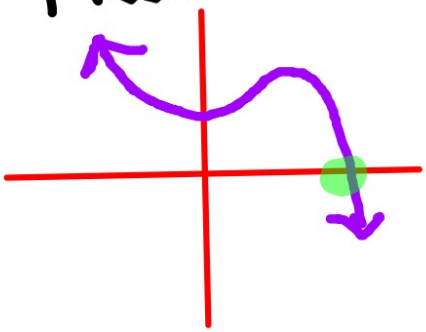


(V-Shape)

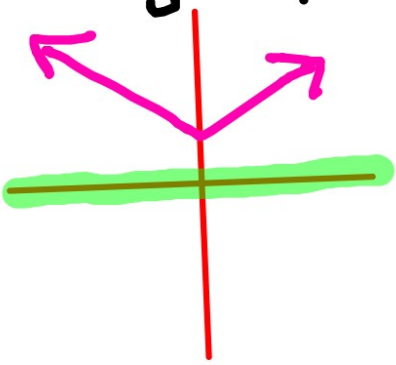
2 real roots



1 real root



(NO REAL)
Imaginary Root



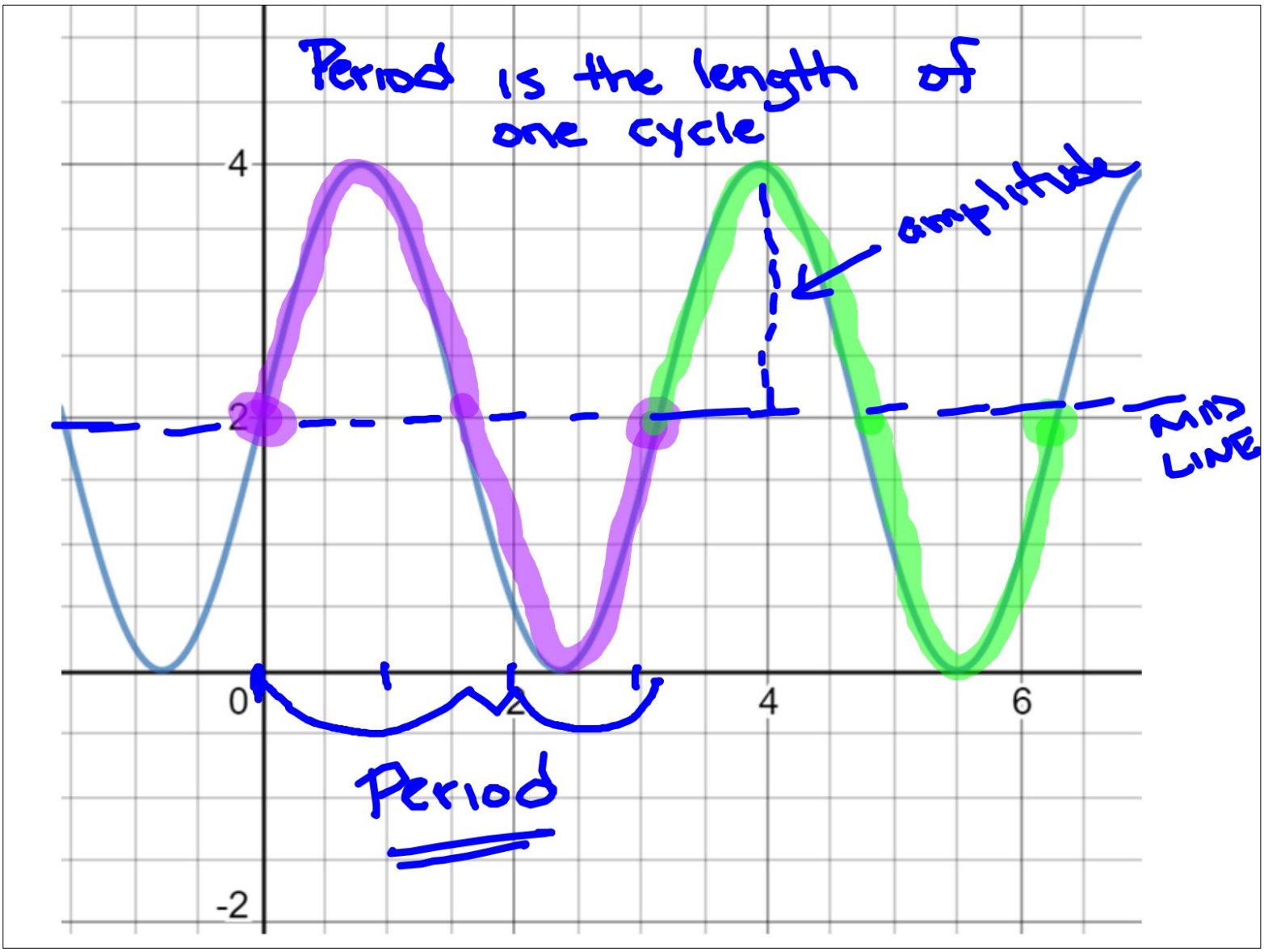
NOTES

Geometric Sequence

* Multiply by the same number each time

* Arithmetic Sequence

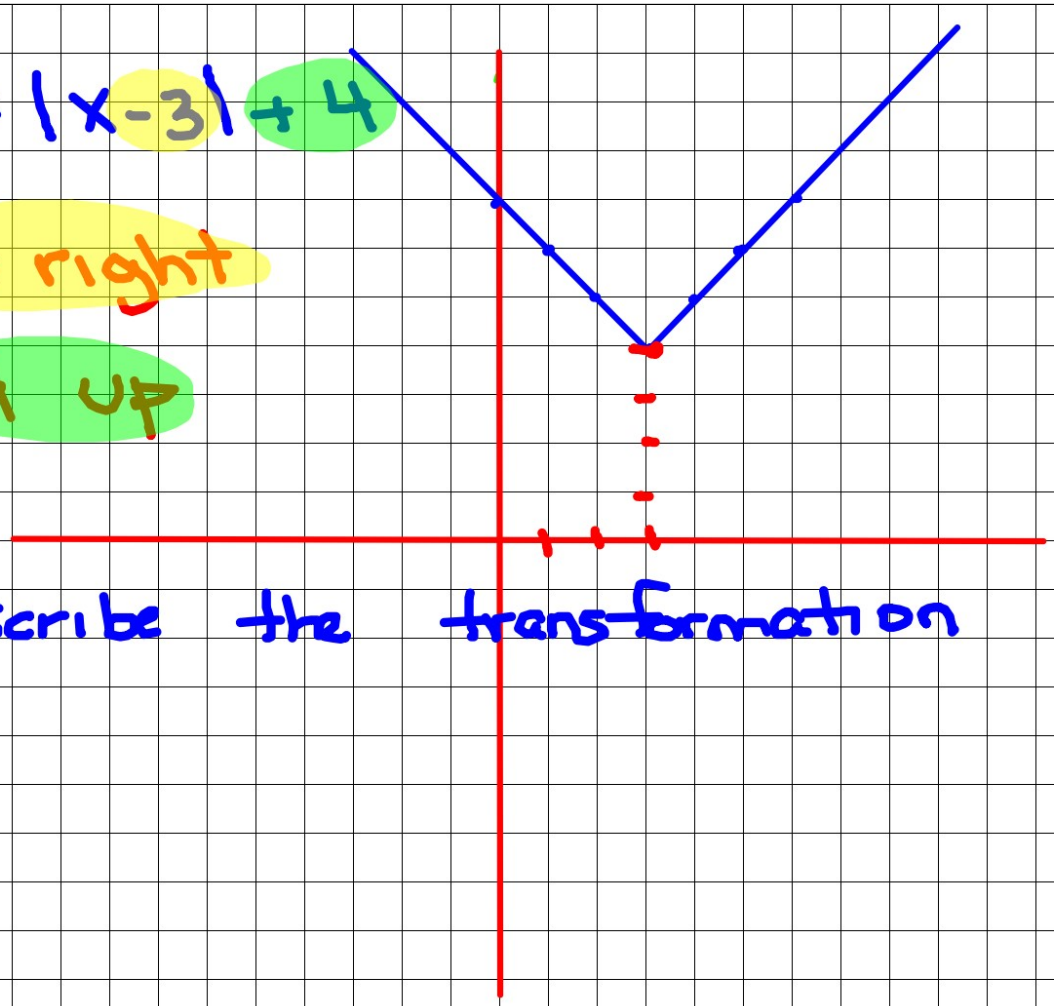
Add/Subtract the same # each time


Period is the length of one cycle
amplitude
MID LINE
4
2
0
2
4
6
-2
Period

$f(x) = |x-3| + 4$

3 right

4 up



Describe the transformation

$i \Rightarrow$ imaginary #

* $i^2 = -1$ Real or Imaginary

Ex:

a) $4i(i) = 4i^2 = 4(-1) = -4$ Real

b) $2(3+4i) = 6 + 8i \Rightarrow$ Imaginary (NON Real)

c) $(2+3i)(4+2i) = 8 + 4i + 12i + 6i^2$

$= 8 + 16i + 6(-1)$

IMAGINAR