DO NOW

- Using a calculator, graph the following functions and describe any changes

1. $y = \sin(x)$
2. $y = sin(2x)$
3. $y = \sin(4x)$
4. $y = \sin\left(\frac{x}{2}\right)$
5. $y = \sin\left(\frac{x}{4}\right)$

LEARNING GOALS

- SWBAT:
  - Analyze the period of a trigonometric function given an equation or a graph of the function.

CLASS AGENDA

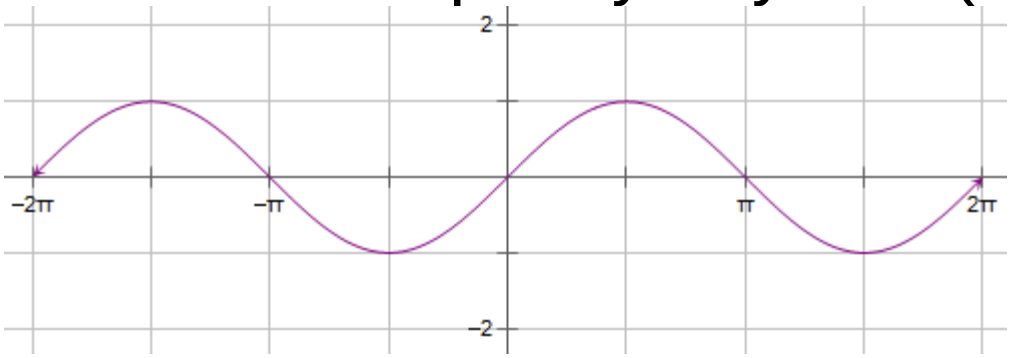
- Calculator Activity
- Review findings
- Period of a Function
- Break
- Practice with changing the period
- Group practice
- Closure

REVIEW FINDINGS

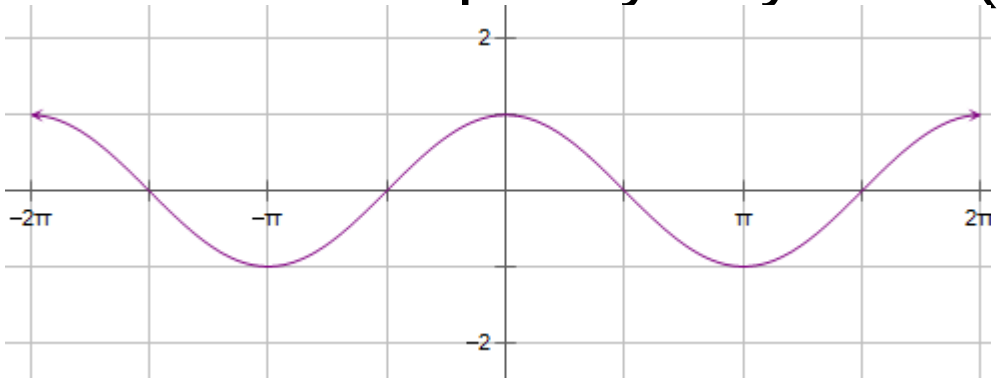
- What changed?
- Which ones occurred MORE frequently?
- Which ones occurred LESS frequently?

PERIOD

- Frequency of the function (How "long" it is)
- What is the frequency of y = sin(x)?



- What is the frequency of y = cos(x)?



PERIOD

- For the curves:
  - $y = a\sin bx$
  - $y = a\cos bx$
- Period = $\frac{2\pi}{b}$

EXAMPLES

- $y = \sin 6x$
- $y = \sin \pi x$
- $y = \cos \frac{\pi}{2} x$
- $y = \sin \frac{3}{4} x$

BREAK

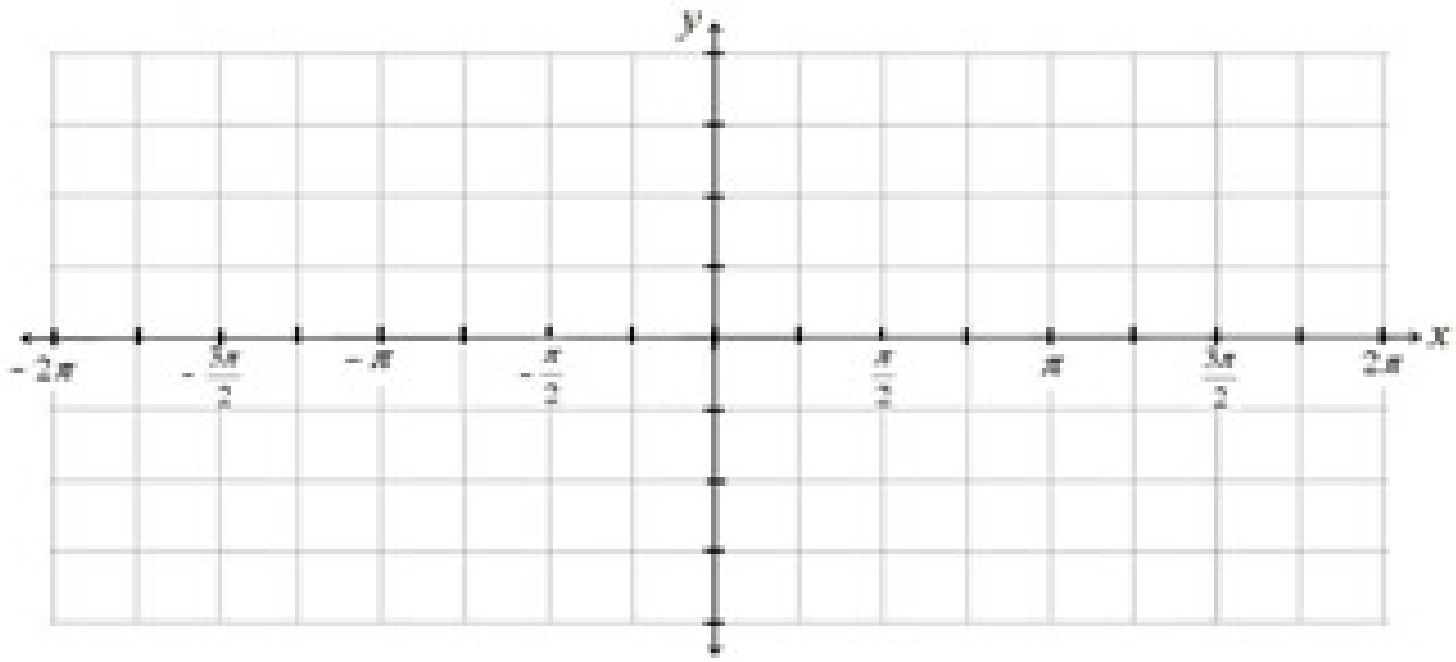
MORE PRACTICE

- Calculate the period of the following functions:

1. $y = \sin 12x$
2. $y = \sin 3x$
3. $y = \sin \frac{x}{3}$
4. $y = \sin \frac{x}{6}$
5. $y = \cos 8x$
6. $y = \cos 5x$
7. $y = \cos \frac{\pi x}{6}$
8. $y = \cos \frac{\pi x}{12}$

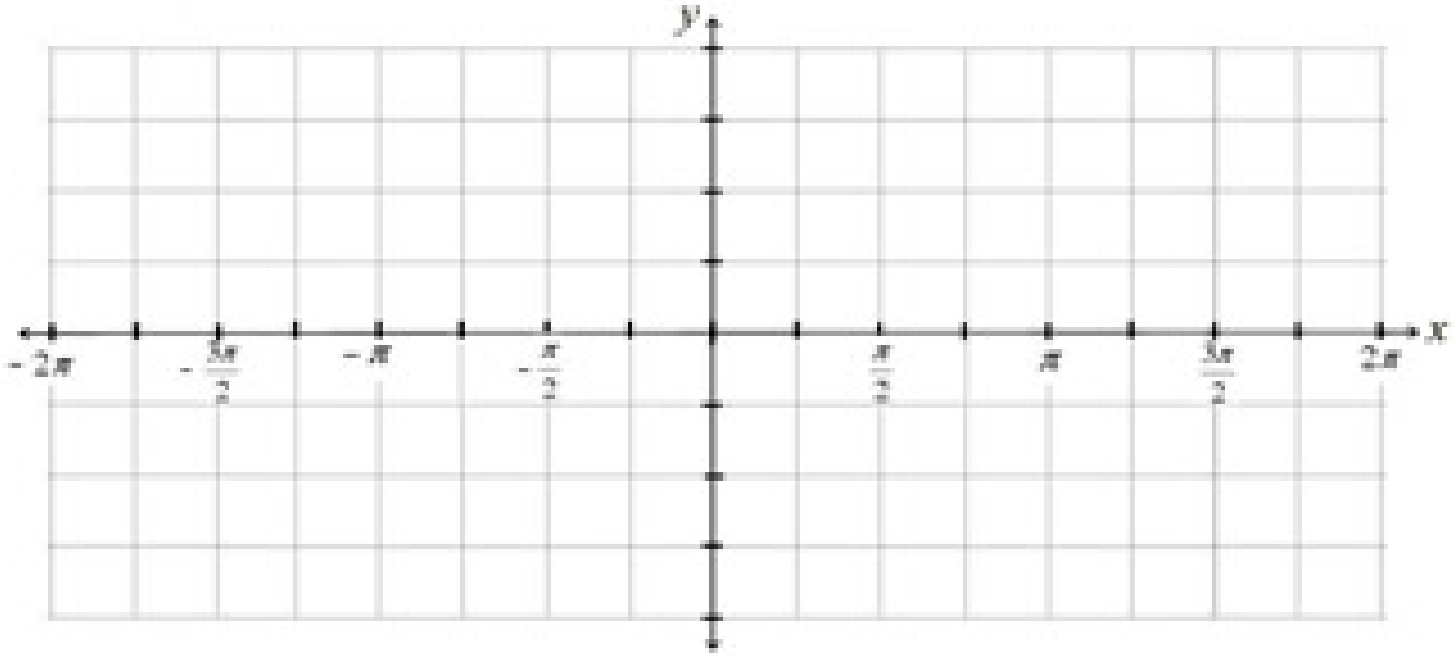
GRAPHING WITH A DIFFERENT AMPLITUDE

- Take the period from the parent function
- Divide that by “B”
- $y = \sin 2x$



GRAPHING WITH A DIFFERENT AMPLITUDE

- $y = \sin \frac{1}{2} x$



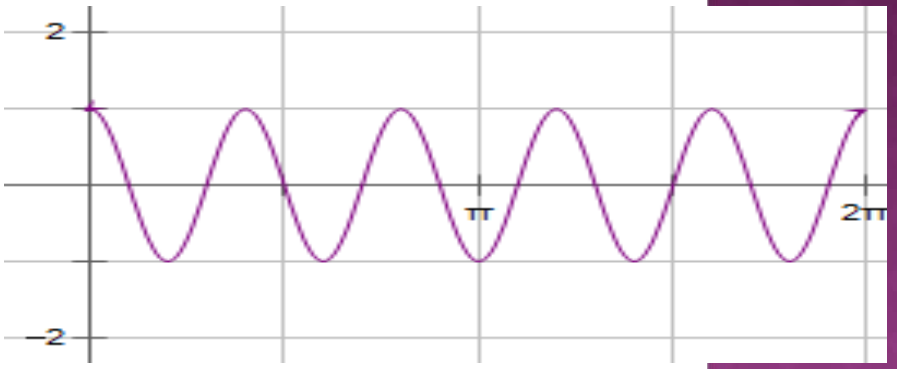
GROUP PRACTICE

- Graph the following:

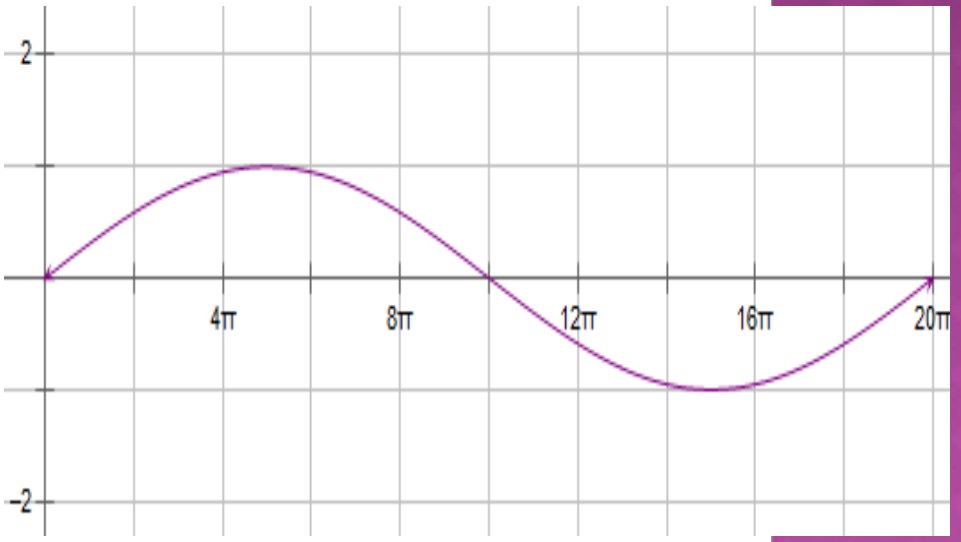
1. $y = \sin\left(\frac{x}{4}\right)$
2. $y = \sin(4x)$
3. $y = \cos(-8x)$
4. $y = \cos\left(\frac{x}{8}\right)$

- Identify the following:

1.



2.



What did you learn today?

CLOSURE

- What did you learn today?