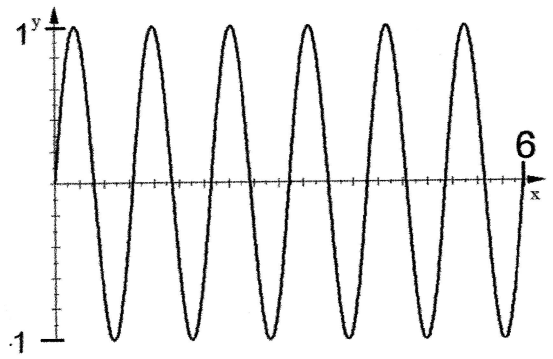
Practice #16 Alg 2 Sec 7-4 Periodic Functions

THURSDAY 16
~~Wednesday~~, April ~~15~~, 2020

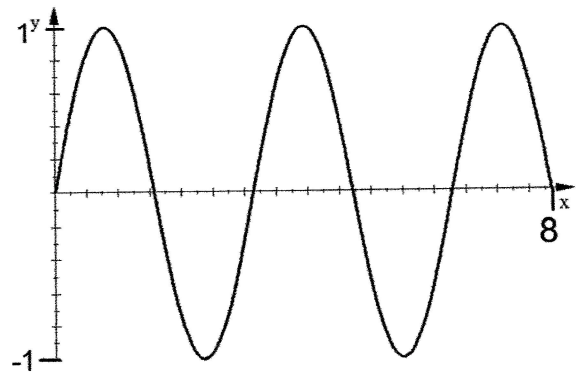
1. Find the Period of each periodic function. Give non integer answers in reduced fractional form.

a)



Period =

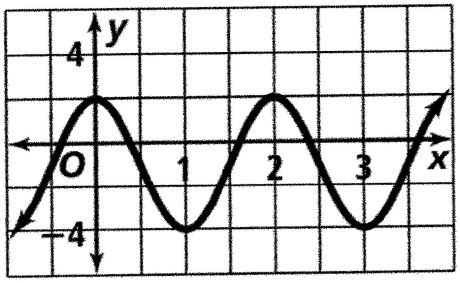
b)



Period =

Find the period, amplitude, and equation of the midline for each periodic function.

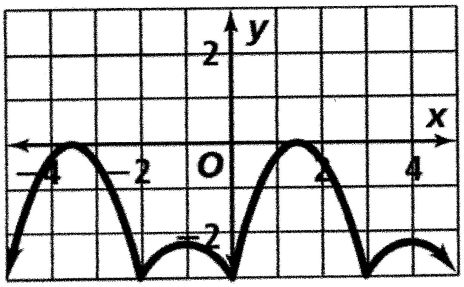
2.



Amplitude =

Eq of Midline:

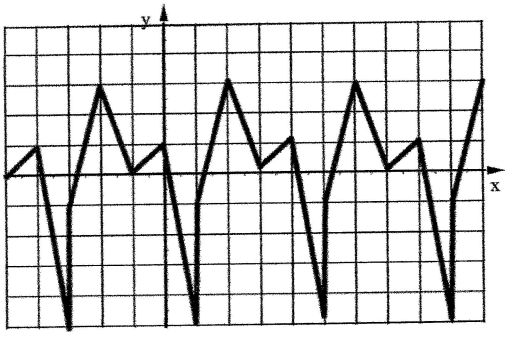
Period =

3. 

Amplitude =

Eq of Midline:

Period =

4. 

Amplitude =

Eq of Midline:

Period =

Answers

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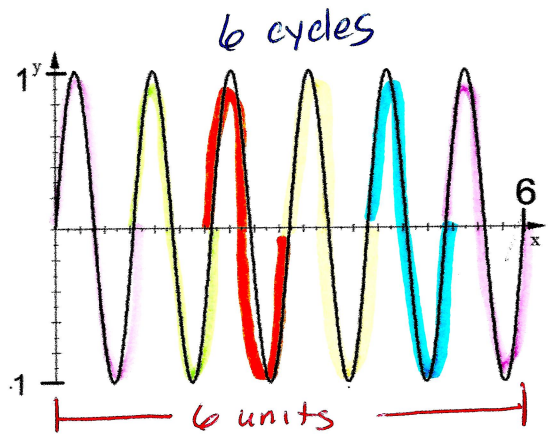
1. Find the Period of each periodic function. Give non integer answers in reduced fractional form.

a)

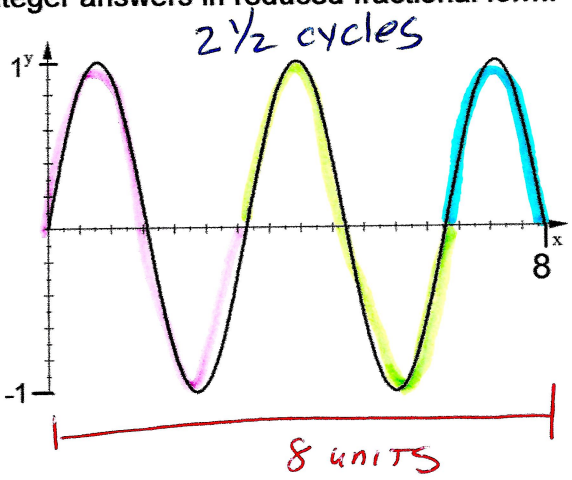


Period =

period = $\frac{\text{TOTAL WIDTH}}{\#\text{cycles}}$ = $\frac{6 \text{ units}}{6 \text{ cycles}}$

Period = 1

b)



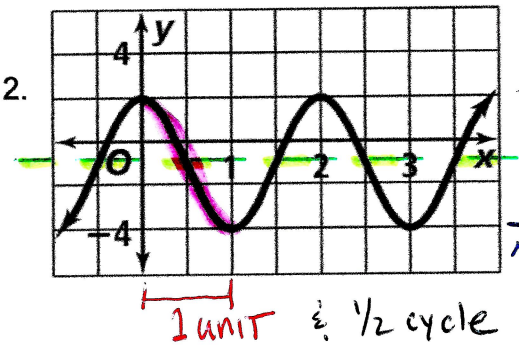
Period =

period = $\frac{8 \text{ units}}{2\frac{1}{2} \text{ cycles}} = \frac{8}{\frac{5}{2}} = 8 \cdot \frac{2}{5}$

Period = $\frac{16}{5}$

Find the period, amplitude, and equation of the midline for each periodic function.

2.



MAX = 2

y = -1

MIN = -4

Amplitude = $\frac{\text{max} - \text{min}}{2} = \frac{2 - (-4)}{2} = \frac{6}{2} = 3$

Eq of Midline: $y = \frac{\text{max} + \text{min}}{2} = \frac{2 + -4}{2} = \frac{-2}{2}$

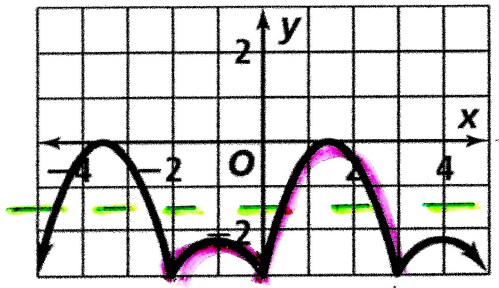
y = -1

Period = $\frac{1 \text{ unit}}{\frac{1}{2} \text{ cycle}} = 1 \cdot \frac{2}{1}$

period = 2

or trace out one full cycle and you'll see it starts at zero and stops at 2.

3.



max = 0

y = -1.5

min = -3

5 units & 1 full cycle

Amplitude = $\frac{\text{max} - \text{min}}{2} = \frac{0 - (-3)}{2} = \frac{3}{2}$

Amp = 3/2 or 1.5

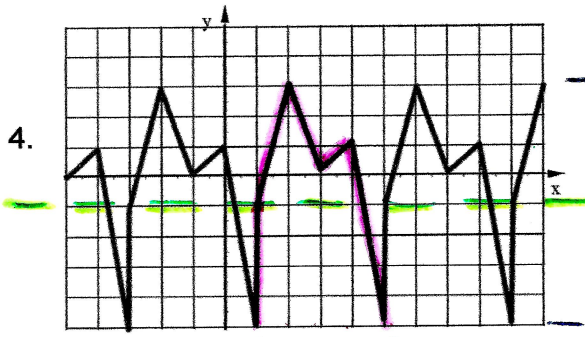
Eq of Midline: $y = \frac{\text{max} + \text{min}}{2} = \frac{0 + -3}{2} = -\frac{3}{2}$

$y = -3/2$ or -1.5

Period = $\frac{5 \text{ units}}{1 \text{ cycle}}$

period = 5

4.



max = 3

y = -1

min = -5

4 units & 1 full cycle

Amplitude = $\frac{\text{max} - \text{min}}{2} = \frac{3 - (-5)}{2} = \frac{8}{2}$

Amp = 4

Eq of Midline: $y = \frac{\text{max} + \text{min}}{2} = \frac{3 + -5}{2} = \frac{-2}{2} = -1$

$y = -1$

Period = $\frac{4 \text{ units}}{1 \text{ cycle}} = \frac{4}{1}$

period = 4