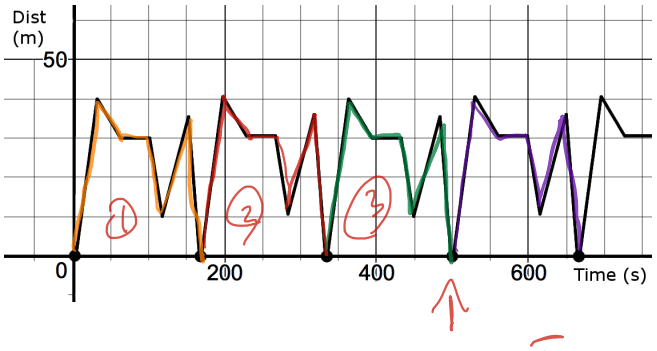
Name: _____ Periodic Functions – 06
Date: _____ Practice Test 01

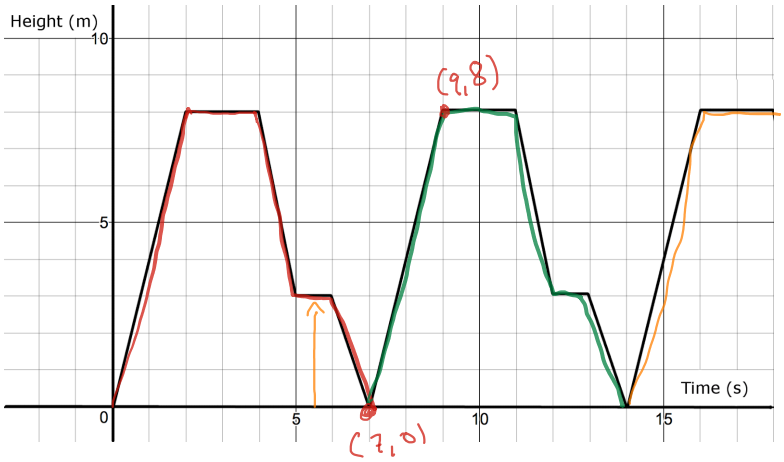
1. Identify the period of the following periodic function.



$\frac{500}{3} = 166.\overline{6}$

Answer: One full cycle takes ___166.6___ seconds to be completed.

2. A roller-coaster ride goes up and down as it travels along the same path over and over again. At what height will the ride be if it breaks down after 2 minutes and 11.5 seconds



cycle = 7 seconds

time = 2x60 = 120 + 11.5 = 131.5

$\frac{131.5}{7} = 18.7$

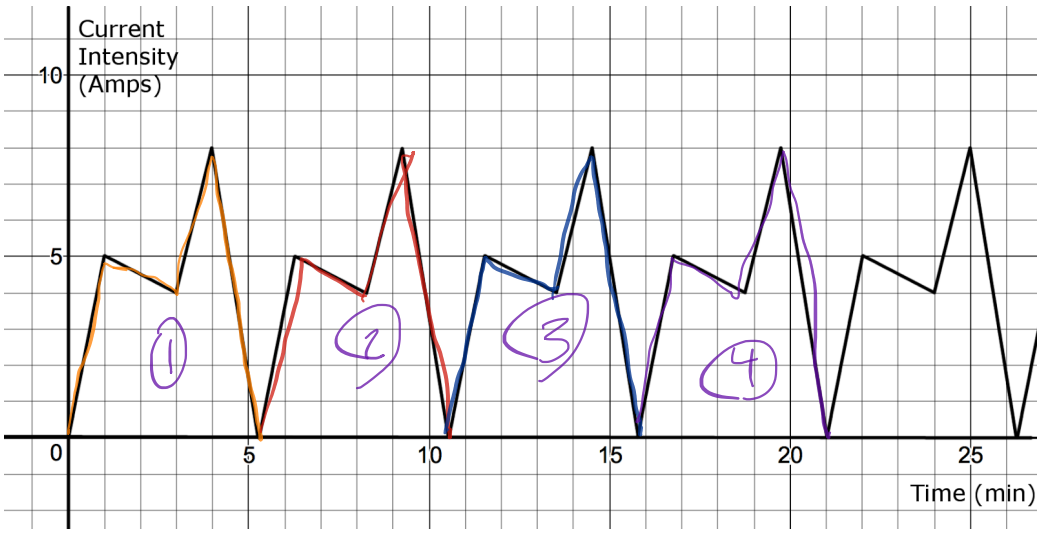
18 full length

full length = 18x7 = 126

time left = 131.5 - 126 = 5.5 (look at graph) = 3 m

Answer: After 2 minutes and 11.5 seconds, the ride will be at a height of ___3___ m.

3. A lighting display uses different amounts of current as it cycles through the different images. If the display runs forever, what will the current intensity be at exactly 1 hour and 48 minutes?



cycles: $\frac{21}{4} = 5.25$

time: 1 hour 48 min

60 + 48 = 108

full cycles: $\frac{108}{5.25} = 20.5$

20 full cycles

20 × 5.25 = 105

time left: 108 − 105 = 3

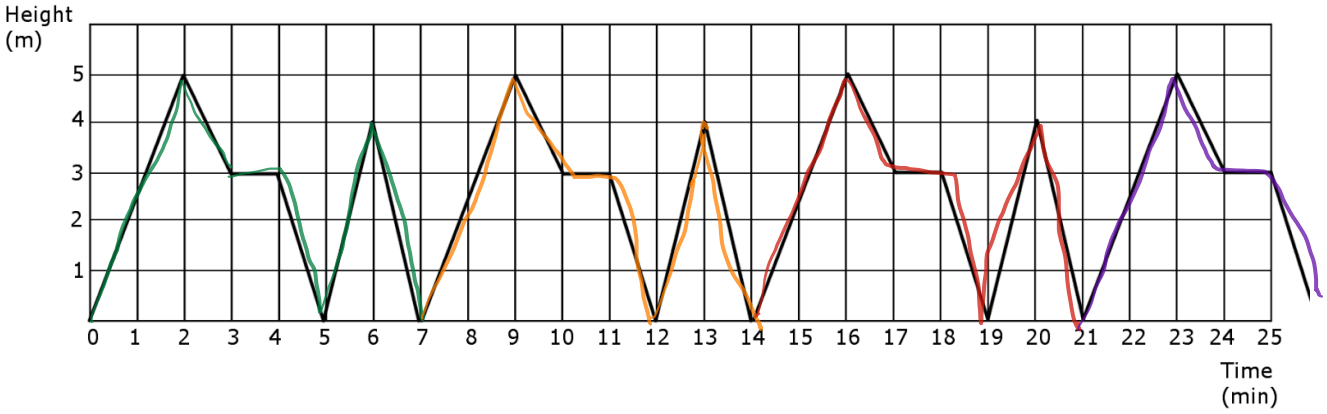
read 3 min of graph

at 3 min = 4 amps

Answer: At 1 hour and 48 minutes, the current intensity will be at 4 amperes.

4. Water shoots out of the middle of a fountain. The height of the jet of water varies.

The periodic function represented below shows the height of the water in relation to the time elapsed from the moment the fountain was turned on.



The water fountain is turned on at 8:00:00 AM.
What will the height of the water spray be at 3:23 PM?

cycles = 7 min

full time: 8:00 - 3:23 = 7 hours 23 min

7 x 60 = 420 + 23

443

full cycles = $\frac{443}{7}$ = 63.2

63 full cycles

time left: 63 x 7 = 441

443 - 441 = 2

2 min off graph

5 meters

Answer: The height of the water will be 5 m.