

Today's Learning Goal(s):

By the end of the class, I will be able to:

- a) State the period given a graph that repeats at regular intervals.
- b) Sketch sinusoidal curves given a table of values.
- c) Recognize when a graph is not a periodic function

Some new terms:**peak**

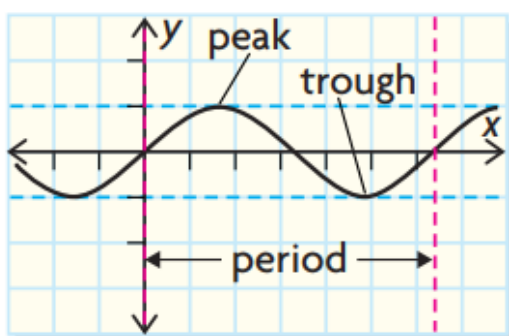
the highest point(s) on the graph

trough

the lowest point(s) on the graph

period

the interval of the independent variable (often time) needed for a repeating action to complete one cycle

**cycle**

a series of events that are regularly repeated; a complete set of changes, starting from one point and returning to the same point in the same way

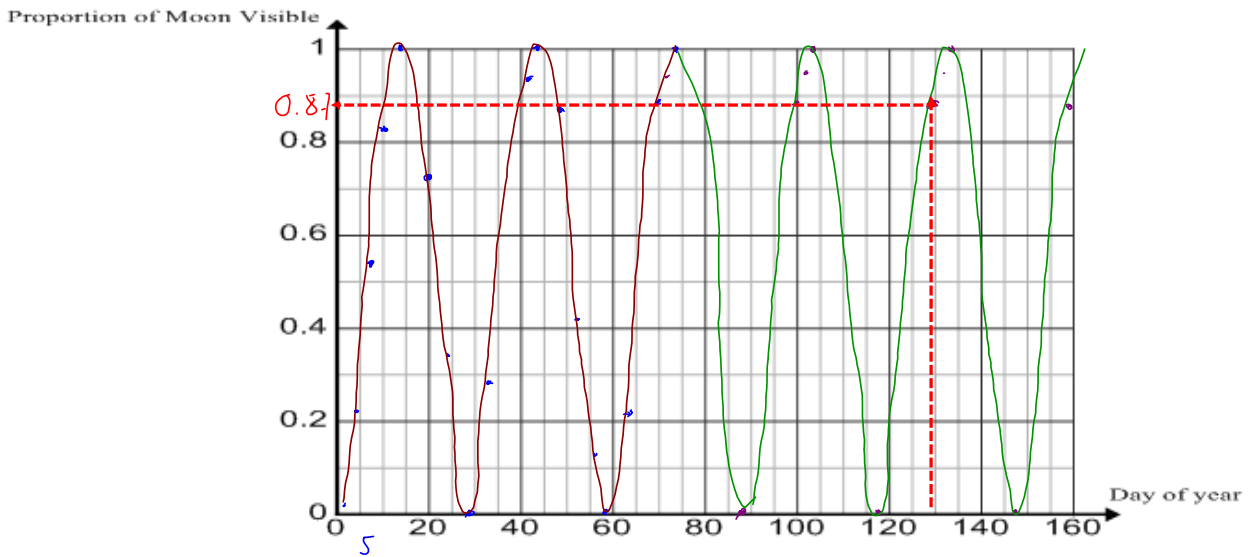


MCF 3MI

6.2 Periodic Behaviour

Date: Nov. 18 / 19

Application 1: Cycle of the Proportion of the Moon Visible



a) Using the table of values on p. 326, graph the points on the grid above.

(see below)

b) Use the repeating pattern to extend the graph to 140+ days.

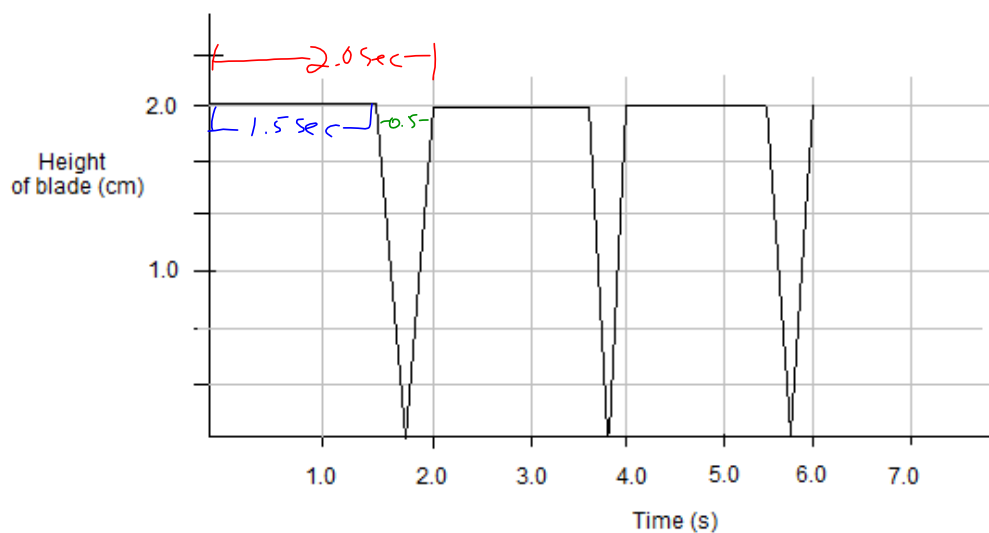
c) What proportion of the moon is visible on day 130?

0.87 or 87%

estimating **within** the data 🙌

Day of Year	1	4	7	10	14	20	24	29	34
Proportion of Moon Visible	0.02	0.22	0.55	0.83	1.00	0.73	0.34	0.00	0.28
		☾	☾		☉		☾		☾

Day of Year	41	44	48	53	56	59	63	70	74
Proportion of Moon Visible	0.92	1.00	0.86	0.41	0.12	0.00	0.23	0.88	1.00
		☉		☾			☾		☉

Application 2: Chopping Machine

- a) What is the period of this function? 🇸🇨 **2.0** seconds
- b) What is the maximum height of the blade? 🇸🇨 **2.0** cm
- c) What is the minimum height of the blade? 🇸🇨 **0** cm
- d) How long does the blade stop within each period? 🇸🇨 **1.5** seconds
- e) How long does it take the blade to go up and down (when making the cut)?
🇸🇨 **.5** second

Today's work: pp. 330-332 # 1 – 3, 5 – 7