

Name _____

Date _____

VERTEXMATH • BUILD YOUR OWN • MCR3U GRADE 11

Sinusoidal Functions: your summary

1 Fill in every blank from memory. No notes.**2** Check it against the Unit Summary in a different colour.**3** Tick ✓ or X on each card. Every X is a topic to review.vertexmath.ca
Worksheet, answers &
this cheat sheet

Sine or cosine?

Write the tool for each case.

(0, c), rising

(0, max)

(0, min)

1 Periodic functions☒ ☒**1** Max 23, min -5: find the amplitude and the equation of the axis.**7** Solving with a model☒ ☒**7** Solve $\sin x = -0.5$ for $0^\circ \leq x \leq 360^\circ$.**2** $\sin x$ and $\cos x$ ☒ ☒**2** Exact values of $\sin 210^\circ$ and $\cos 315^\circ$.**3** Transformations☒ ☒**3** Amplitude, period, phase shift and range of $y = -3 \sin[4(x + 15^\circ)] - 2$.**4** Graphing with key points☒ ☒**4** Find the first maximum of $y = 5 \sin[2(x - 20^\circ)]$ after the shift.**5** Equation from a graph☒ ☒**5** Max 9, min 1, period 240° , first max at $x = 40^\circ$. Write a cosine equation.**6** Modelling☒ ☒**6** Radius 9 m, hub 11 m, one turn every 40 s, boarding at the bottom. Write $h(t)$.**My traps** Your three most likely mistakes, and how you will catch each one.**1** _____ **2** _____ **3** _____

Answers • Answers to the numbered prompts. Cover this strip until you are done.

1 Amplitude 14; axis $y = 9$
2 $-1/2$ and $\sqrt{2}/2$
3 $3; 90^\circ; 15^\circ$ left; $[-5, 1]$
4 $(90^\circ/2 + 20^\circ, 5) = (65^\circ, 5)$
5 $y = 4 \cos[1.5(x - 40^\circ)] + 5$
6 $h = -9 \cos(9t) + 11$
7 $x = 210^\circ$ or 330°