

- Estimate, to the nearest tenth, each measure in radians.
 a) 186° b) 500° c) 20° d) 345°
- Estimate, to the nearest degree, each measure in degrees.
 a) 5.6 b) 4.71 c) 6 d) 9.5
- Determine the x -intercepts of the graph of the function

$$y = 2 \sin 3x$$
 over each interval:
 a) from 0° to 720° b) from 0 to 12.6
- Determine the range, amplitude, period, horizontal translation of
 $y = \sin x$ and equation of the midline of each function.
 a) $y = 4 \sin 3(x - 20^\circ) + 3$ b) $y = 2 \sin 2(x - 60^\circ) - 4$
- The average high monthly temperatures for Dauphin, Manitoba, are given in the table below. Determine the equation of a sinusoidal regression function that models these temperatures.

Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Average High ($^\circ\text{C}$)	-11.9	-7.8	-0.9	9.5	18.2	22.4	24.9	24.2	17.5	10.4	-0.9	-9.3

- A coach measures the velocity of air as a gymnast inhales and exhales after working out.
 a) Plot the data in the table, and determine the equation of a sinusoidal regression function that models the data.
 b) State the period of the function.
 c) Explain why some velocities are positive and other velocities are negative.
 d) Predict when the velocity of air will be 0 L/s from 9 s to 19 s.

Time (s)	Velocity of Air (L/s)	Time (s)	Velocity of Air (L/s)	Time (s)	Velocity of Air (L/s)
1.0	1.75	4.0	0	7.0	-1.75
1.5	1.24	4.5	1.24	7.5	-1.24
2.0	0	5.0	1.75	8.0	0
2.5	-1.24	5.5	1.24	8.5	1.24
3.0	-1.75	6.0	0	9.0	1.75
3.5	-1.24	6.5	-1.24		

WHAT DO You Think Now? Revisit **What Do You Think?** on page 513. How have your answers and explanations changed?