

Chapter 5 Review Test, page 491

- (a) exponential (b) linear (c) quadratic
 (d) periodic, period: 4 s, maximum: 25 cm, minimum: -25 cm
- Modify the amplitude, period, phase shift, and vertical shift of a sine curve or a cosine curve to match the data.
- (a) $-313^\circ, 47^\circ, 407^\circ$ (b) $\frac{-4\pi}{3}, \frac{2\pi}{3}$ (c) $15^\circ, 375^\circ, 735^\circ$
- (a) $\frac{13\pi}{9}$ (b) $\frac{-\pi}{12}$
- (a) 450° (b) -630°
- 0.47
- (a) $\sin \theta = \frac{7}{\sqrt{58}}, \cos \theta = \frac{-3}{\sqrt{58}}, \tan \theta = \frac{7}{-3}$ (b) 113°
- (a) period: 120° , amplitude: 2, phase shift: 30° right, vertical shift: +1
 (b) Apply the transformations as follows: horizontal stretch, phase shift, vertical stretch, vertical shift; amplitude = 2; phase shift = 30° right; period = 120° ; vertical shift = 1; min. $(0^\circ, -1), (120^\circ, -1), (240^\circ, -1), (360^\circ, -1)$; max. $(60^\circ, 3), (180^\circ, 3), (300^\circ, 3)$; axis of symmetry $y = 1$
- (a) $95^\circ, 265^\circ$ (b) $72^\circ, 108^\circ, 192^\circ, 228^\circ$
 (c) 3.1 (d) 0.7, 5.5
- (a) Plot the points given. Let x -axis represent the month and y -axis represent temperature; $T = -18.9 \cos \frac{\pi}{6}t + 5.8$
 (b) On a yearly basis, the average temperature each month will be roughly the same.
 (c) maximum: 24.7°C , minimum: -13.1°C
 (d) period = 12; the curve repeats after 12 months, representing one year
 (e) $T = 5.8^\circ\text{C}$ (f) no phase shift
 (g) $T = -18.9 \cos \frac{\pi}{6}t + 5.8$
 (h) -10.6°C . Month 38 is February and the table shows a temperature close to that value.
- (a) The initial speed of the ball is 36.7 m/s.
 (b) The fly ball is struck at an angle of 64° . The line drive is struck at an angle of 26.3° .
- 2k solutions