

Answers to Week 1

• Section 0.1

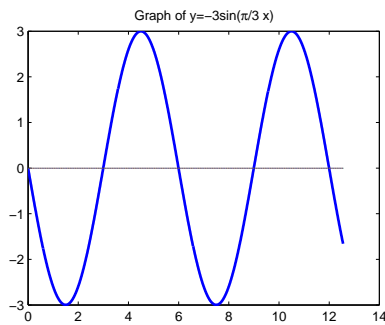
1. $\left[\frac{3}{2}, \infty\right)$
2. $(-\infty, -1) \cup (4, \infty)$
3. $2th + h^2 - h$
4. $f(g(x)) = \sqrt{x^2 - 1}$, domain $(-\infty, -1) \cup (1, \infty)$;
 $g(f(x)) = x - 1$, domain $[-1, \infty)$
5. a) $\frac{160}{w} + w^2$; b) $\frac{40}{h} + 4\sqrt{40h}$

• Section 0.2

1. $a = \frac{1}{2}$, $b = -2$, $c = 3$

• Appendix D

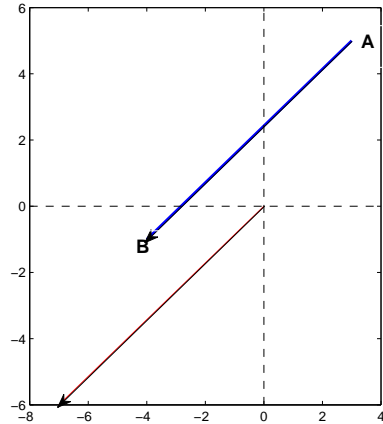
1. $\sqrt{8}$
2. $\frac{1}{2}$
3. $-\frac{\sqrt{21}}{2}$



- 4.
5. $A = -2$, $b = \frac{\pi}{2}$
6. $\sin x(\cos^4 x - 2\cos^2 x + 1)$
7. $x = 0, \frac{\pi}{3}, \pi, \frac{5\pi}{3}, 2\pi$

• Section 1.1

1. $-7\mathbf{i} - 6\mathbf{j}$



2. $-\frac{6}{\sqrt{37}}\mathbf{i} + \frac{1}{\sqrt{37}}\mathbf{j}$
3. $7\mathbf{i} - 2\mathbf{j}$, $7\mathbf{i} + 22\mathbf{j}$
4. (approximation on calculator) 0.26m/sec^2 ; 71.6°
5. (approximation on calculator) 42.82lbs ; 32.45lbs