

**Answers**  
**Key Concepts Review Chapter 1**

1. a)  $x = \frac{a - 2b + 6c - 6}{6}$       b)  $a = \frac{b^2 + b}{2}$   
c)  $i = -100 \pm 100\sqrt{\frac{A}{P}}$       d)  $r = 1 - \frac{a}{S}$   
e)  $c = \frac{5(s+a)(s-a)}{3s+a} - 5$
2. a)  $x = \frac{6 \pm \sqrt{39}}{3}$       b)  $x = \frac{5 \pm \sqrt{17}}{4}$   
c)  $x = \frac{-6 \pm \sqrt{34}}{2}$       d)  $x = \frac{-2 \pm i\sqrt{2}}{2}$   
e)  $x = -3 \pm i$
3. a)  $2\sqrt{2} - 8i$       b)  $(2 + 2\sqrt{3}) + (2 - 2\sqrt{3})i$   
c)  $-i$       d)  $2$   
e)  $\frac{1}{20} + \frac{3}{20}i$
4. a)  $x = \pm\sqrt{2}, \pm 3i, \pm i\sqrt{2}$       b)  $x = 4, 5, \frac{7}{2}$   
c)  $x = 729, 27$       d)  $x = -5, 2$   
e)  $x = \frac{1 \pm \sqrt{13}}{2}$
5. a)  $(-2, -1] \cup (0, 2]$       b)  $[-4, -1)$   
c)  $(-3, 0) \cup (3, \infty)$       d)  $(-1, 1 - \sqrt{3}] \cup (1, 1 + \sqrt{3}]$   
e)  $(-\infty, 2] \cup (3, \infty)$
6. a)  $(-\infty, -3] \cup [-1, \infty)$       b)  $(-\infty, 0] \cup [6, \infty)$   
c)  $[-54, 42]$       d)  $(-\infty, -13) \cup (11, \infty)$   
e)  $(-4, 8)$