

- p p q $6+u$ r $9p+q$
 s $-g+4h$ t 0 u $x+4$
 v $10l+1$ w $9+w$ x $2a+b$
 y $3x^2$ z $2q^2$
2. a $8p$ b $4w$ c m^2 d d^8
 e $12e$ f $0.5h$ g $1.2n$ h $5y^2$
 i $48u$ j $56p$ k $12c^2$ l $3pq$
 m w^3 n u^3 o $9ab$ p $15pq$
 q $3y^{23}$ r $10g^3$ s $20h^3$ t $4q^2$
 u 4 v 10 w $2b$ x $2x$
 y $3x$ z $3x$
3. a $7x^2$ b $5a^2$ c $7k^2$ d $8y$
 e $21n^2$ f $32m$ g $30d$ h $63e^2$
 i $100xy$ j $5a$ k $12a^2b$ l 7
 m $20f$ n $14x-4yo$ $z+1$ p $2a^3+2$
 q $7x^2$ r $8m-n$ s $u+10$ t $5x$
 u $8-2a$ v $8g-2$ w 1 x $8x^2-6$
 y $8p^2-8$ z $7k$
4. a $x^2+10x+24$ b $y^2+12y+20$
 c $4mn$ d $9a+3ab$
 e $80pq$ f $k^2+12k+32$

Chapter 7 - Exercise 2 (page 56)

1. a $2a+10$ b $3x+6$ c $6g+6$
 d $7m+28$ e $2x-6$ f $5n-10$
 g $8p-8$ h $10t-40$ i $5m-20$
 j $2-2u$ k $14-7x$ l $30+15k$
 m $4a+4b$ n $2c+2d$ o $5m-5n$
 p $10d-10e$ q $60+20x$ r $120-30w$
 s $100a-300$ t $50g-300$
2. a $6x+2$ b $8a+6$ c $3+15d$
 d $12-20k$ e $49h-14$ f $40-32n$
 g $30a+6y$ h $12t+4z$ i $10b-8c$
 j $70k-14b$ k $xy+2x$ l $ab-8a$
 m $wv-v$ n a^2-3a o $p-p^2$
 p $2x+x^2$ q $3pq+pr$ r $10a-20a^2$
 s $20a^2-2uy$ t $6a+4b+2$ u $10w+30w+40y$
 v $15x-6y-12z$ w $10p+10q-40r$ x $24u-40v-72$
3. a $-3x-3$ b $-2a+10$ c $-m-n$
 d $-m+n$ e $-6p+6q$ f $-x^2-7x$
 g $-p-p^2$ h $-2w^2-18w$ i $-7k^2+k$
 j $-8e^2-40e$ k $-3xy+8x^2$ l $-p^3+10p^2q$
4. a $3(x+6) = 3x+18$
 b $7(10-a) = 70-7a$

Chapter 7 - Exercise 3 (page 57)

1. a $2x+6$ b $3a+17$ c $5p+7$
 d $6w$ e $10k+2$ f $d+6$
 g $20+2g$ h $10x+20$ i $12a-8$
 j $22q-10$ k $5w-1$ l $9a+24b$
 m $15m+16q$ n $20x-40y$ o $100p+6q$
 p $3x+4$ q $-10b$ r $100w+20z$
 s $2g$ t $7m+14n+1u$ $2e-4f$
2. a $5x+8$ b $9a+21$ c $7h+3$
 d $9m+3$ e $17+v$ f $9+u$
 g $20e+4$ h $12+2x$ i $8b+20a$
3. a $x+5$ b $a+2$ c $4p+2$
 d $4p+4$ e $2k+18$ f $1+8m$
 g $8+2d$ h h^2+h+3 i $3a^2-5a+12$
4. a $-2x-2$ b $3w+1$ c $10-5d$
 d $20-5h$ e $5+6m$ f $-2g$
 g $2a-20$ h $6t$ i $7x-4$
5. $x^2+4x-(5x-10) = x^2-x+10$

Chapter 7 - Exercise 4 (page 58)

1. a 2 b 5 c 7
 d 20 e 70 f -1
 g 6 h -9 i 3
 j -8 k 0 l -50

- m 7 n 7 o $1/4$
 p $6^{2/3}$ q $1/6$ r $2^{1/2}$
2. a 10 b 7 c 27
 d 6 e 100 f 4
 g 2 h 3 i 8
 j 6 k 10 l 8
 m 28 n -1 o $4^{1/2}$
 p -4 q $2^{1/2}$ r $4^{3/4}$

Chapter 7 - Exercise 5 (page 59)

1. a 3 b 2 c 1
 d 6 e 3 f 4
 g 4 h 5 i $5^{1/2}$
 j 3 k 5 l -1
 m 2 n 4 o 1
 p 6 q $4^{1/2}$ r 5
 s 2 t 5 u 1
 v 9 w 2 x 8
2. a 12 b 9 c 16
 d 4 e 5 f 8
 g 12 h 5 i 100
 j 4 k -4 l -3
 m $1/3$ n 11 o $7^{1/3}$
 p 2 q -2 r $1/2$
 s 9 t $-1^{1/2}$ u $3^{1/2}$
 v 20 w 2 x 4
 y 1 z 4

Chapter 7 - Exercise 6 (page 60)

1. a 9 b 2 c 24 d -4
 e 14 f -7 g 9 h 27
 i 0 j 18 k 12 l $5-4$
2. a 20 b 28 c 16 d 32
 e 64 f 160 g 1280 h 2
3. a 16 b 1 c 16 d 6
 e 20 f -5 g -40 h 36
4. a 11 b 24 c -10
 d 21 e 90 f 31
 g 2 h 2 i 5
5. a 9 b 25 c 1 d 2
 e 49 f 18 g 6 h 1
 i 3 j 4 k 5 l 49
6. a 18 b 1 c 4
 d 18 e 44 f 5
 g 59 h 3 i 6
7. a 1 b 2 c 4
 d 2 e 2 f 2
 g 3 h 3 i 300
8. a 7 b 90 c 150
 d 100 e 52 f 250
 g 22 h 60 i 30
 j 8 k 10

Chapter 7 - Exercise 7 (page 62)

1. a $W = x+y$ b 5 c 2.5
2. a $L = m-n$ b 2.25 c 12.75
3. a $S = D/T$ b 60 mph c 330 miles
4. a $C = 10+5k$ b $\text{£}40$
5. a $F = 1.8C+32$ b 86°F
6. a $T = 10g+h$ b 215 mins
7. a $P = 2a+2b+c$ b 26 c 16
8. a $L = x+y$ b $P = 6x+2y$ c 38
9. a $P = 4n+2m$ b 32 c 5
10. a $S = 4x+40$ b 120
11. (i) a $A = 3(x+6) = 3x+18$ c 33
(ii) a $A = 4(x+10) = 4x+40$ c 60
(iii) a $A = 7(20-x) = 140-7x$ c 105
(iv) a $A = 2(9-x) = 18-2x$ c 8

12. (i) a $A = 6p$ b $A = 4(p-3)$
 c $A = 6p-4(p-3) = 2p+12$ d 20
(ii) a $A = q(q+4)$ b $A = 8(q-2)$
 c $A = q(q+4) - 8(q-2) = q^2-4q+16$
 d 28

Answers to CHAPTER 8 (page 67)

Chapter 8 - Exercise 1 (page 67)

1. a Perimeter = 28 cm, Area = 40 cm²
 b Perimeter = 27 cm, Area = 44 cm²
 c Perimeter = 36 cm, Area = 81 cm²
 d Perimeter = 40 cm, Area = 60 cm²
 e Perimeter = 15 cm, Area = 9 cm²
 f Perimeter = 54 cm, Area = 170 cm²
 g Perimeter = 36 cm, Area = 54 cm²
 h Perimeter = 28 cm, Area = 21 cm²
 i Perimeter = 2 cm, Area = 0.25 cm²
2. a 81 cm² b 24000 mm² c 5 m²
 d 540 m² e 72.5 cm² f 2.4 m²
3. a 170 m² b 10 c $\text{£}130$
4. a 14.8 m b $\text{£}35$
5. $\text{£}600$

Chapter 8 - Exercise 2 (page 69)

1. a/b see drawing
 c 48 cm² d 24 cm²
2. (i) a 120 cm² b 60 cm²
(ii) a 60 cm² b 30 cm²
(iii) a 130 cm² b 65 cm²
3. a 30 cm² b 48 cm² c 35 cm²
 d 1100 mm² e 6.2 m² f 9.62 cm²
4. a 18 cm² b 31.5 cm² c 9.5 cm²
 d 26 cm² e 875 cm² f 4800 mm²
5. 6.4 m²
6. $180 \text{ cm}^2 \times 2 = 360 \text{ cm}^2$ (fish has 2 sides)
7. 112.5 cm²
8. 1.26 cm²
9. a 2.3 cm b 5.175 cm²
10. 140 cm²
11. a 150 cm² b 176 m² c 4800 mm²
12. 10 cm

Chapter 8 - Exercise 3 (page 72)

1. 160 cm²
2. a 99 cm² b 65 cm² c 72 cm²
 d 54 cm² e 22 cm² f 50 cm²
 g 138 cm² h 31.5 cm² i 14.4 cm²
3. 5580 mm²
4. 104 m²
5. 14.4 m²
6. 1200 cm²
7. 240 cm²
8. 14.88 m²
9. a RSUP and PQST b 810 cm² - 414 cm²
10. 15 cm

Chapter 8 - Exercise 4 (page 74)

1. a 56 cm² b 40.5 cm² c 108 cm²
 d 44 cm² e 2200 mm² f 3672 mm²
2. 11 cm²
3. 15360 cm²
4. 1704 cm²