Collecting Like Terms Solutions

Q1.

a) $4a$	b) $3r + 2g$	c) $5e + a$
d) $7f + 4w$	e) $5h + 7u + 5$	f) $11x + 12$
g) $5w + 2b + 2$	h) d	i) $8v + a + 2$
j) 6	k) 0	l) $9g + t + 19$

Q2.

|		
a) $6ad$	b) $6fg$	c) $4abc$
d) $6x^2$	e) $4x^2 + 4r^2$	f) $5d^2 + 5d$
g) $6y^2 + 12 + 12g^2$	h) $5x^2$	i) $5y^2 + 5y$
j) $2ab^2 + ab^2 + 2b + 2a$	k) $3r^2 + 11r + 3$	l) $3t^2 + 3 + 11t + 2j^2$

Q3.

a)

	11c	
	5c	6c
4c	c	5c

b)

	10a + 6b	
	5a + 3b	5a + 3b
3a + b	b + 2a	3a + 2b

c)

	6y + 12	
	5y + 6	y + 6
2 + 5y	4	y + 2

d)

	$5f^2 + 2e + 10$	
	$3f^2 + 2e + 4$	$2f^2 + 6$
$2f^2 + 2e + 3$	$f^2 + 1$	$f^2 + 5$
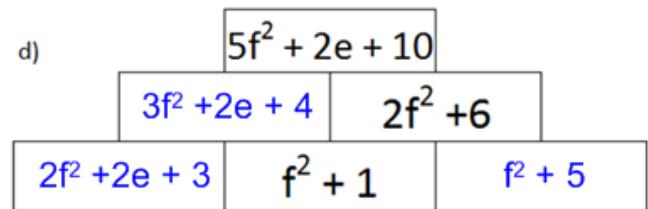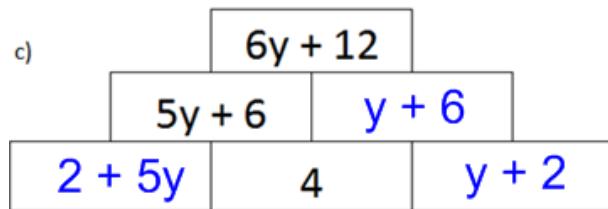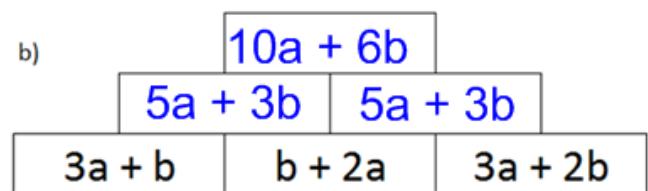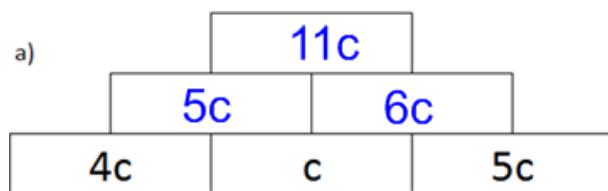
Q4.

a) Perimeter $= 14c + 8a + 6 \; units$

b) Perimeter $= 7f + 3 \; units$

Algebraic Products Solutions

Q1.

a) $3a$

b) $5r$

c) $14r$

d) rw

e) $3eh$

f) $16iu$

g) $6d$

h) $24d$

i) $36g$

j) $2re$

k) $8qxd$

l) $54wes$

Q2.

a) y^2

b) $2x^2$

c) $8r^2$

d) $2h^2f^2$

e) $6pq$

f) $6x^2y^2$

g) $6i^3r$

h) $16m^2n$

i) $12g^2fa$

j) $16y^2x^2e$

k) $16g^3e^2$

l) $24r^3f^3$

Q3.

a)

x + 2y	
x	2y
2xy	

b)

3a + b	
3a	b
6ab	

c)

7gr + 2g	
5gr	2g
10g²r	

c)

6gh + 2e	
6gh	2e
12ghe	

d)

3 + er	
3	er
3er	

e)

9m + 4tk	
9m	4tk
36tmk	

Q4.

a) Possible perimeters include: 8a + 2b, 4a + 4b, 8b + 2a (not exhaustive)

b) Possible perimeters include: 72r² + 2h, 36r + 4hr², 18h + 2h², 72 + 2r²h, 4h² + 36 (not exhaustive)

Substituting into Expressions Solutions

Q1.

a) 16	b) 7	c) 1
d) 40	e) 36	f) 10
g) 1	h) 4	i) 6
j) 9	k) 14	l) 6

Q2.

a) 12	b) 38	c) 16
d) 420	e) 22	f) 65
g) 2	h) 4	i) 1
j) 5	k) 62	l) 634

Q3.

$$2d + 6 \; (46) \qquad 4t + u \; (27) \qquad \frac{5u + 6}{3} \; (7) \qquad d + m \; (32) \qquad t \; (6)$$

$$d + t + 1 \; (27) \qquad \frac{um}{t} \; (6) \qquad 3m + 10 \; (46) \qquad 6t - 4 \; (32) \qquad ut - 11 \; (7)$$

Q4.

$$4m + r \; (15) \qquad 2t - md \; (18) \qquad dt + 5m \; (25) \qquad 3t + rm \; (26)$$