

**Progress exercise 1.1**

- (a) 20
- (b) 53
- (c) 4
- (d) -8
- (e) -14
- (f) -2

**Progress exercise 1.2**

- (a) -21
- (b) 2
- (c) 18
- (d) -2
- (e) -10
- (f) -3

**Progress exercise 1.3**

- (a)  $6(3 + 1 - 6)$
- (b)  $10(15 + 22)$
- (c)  $3(-4 - 1 + 2)$  or  $-3(4 + 1 - 2)$
- (d) 135
- (e) -42
- (f) 3

**Progress exercise 1.4**

- (a)  $\frac{1}{5}$
- (b)  $\frac{1}{11}$
- (c)  $-\frac{2}{13}$
- (d)  $\frac{3}{11}$

**Progress exercise 1.5**

- (a)  $\frac{9}{10}$
- (b) 0
- (c)  $2\frac{3}{4}$
- (d)  $6\frac{9}{16}$
- (e)  $\frac{1}{6}$
- (f)  $1\frac{11}{16}$

**Progress exercise 1.6**

1. (a)  $\frac{1}{5}$   
(b)  $\frac{2}{3}$   
(c)  $\frac{3}{32}$   
(d)  $7\frac{1}{8}$   
(e)  $10\frac{1}{2}$   
(f)  $1\frac{7}{20}$
2. (a)  $\frac{1}{4}(1 + \frac{3}{2})$   
(b) won't factorise  
(c)  $\frac{3}{8}(\frac{1}{2} + 1)$   
(d)  $\frac{1}{3}(\frac{5}{4} - 1)$   
(e)  $\frac{1}{4}(\frac{11}{4} + \frac{5}{3})$   
(f)  $\frac{1}{15}(3 + 5)$

**Progress exercise 1.7**

1. (a) 1.35  
(b) 127.5  
(c) 0.032  
(d) 0.0465  
(e) 0.325  
(f) 3  
(g) 0.016  
(h) 0.05
2. (a)  $\frac{9}{25}$   
(b)  $\frac{7}{8}$   
(c)  $3\frac{51}{1000}$
3. (a) 0.06  
(b) 0.375  
(c) 0.15  
(d) 0.666 (recurring)

**Progress exercise 1.8**

1. (a) 20%  
(b) 22.22 (recurring)  
(c) 25  
(d) 125  
(e) 15  
(f) 60

- (g) 4  
(h) 3.5
2. (a) 428.4  
(b) 508,042.5  
(c) 0.0383
3. Suppose the price is 60 (euros, pounds or whatever). Then you get 3 for 120, equivalent to a price of 40. So effective price reduction is from 60 to 40, a reduction of one-third or  $33\frac{1}{3}\%$ .
4.  $\frac{14.894}{100} \times 100 = 14.894\%$ .
5. A's fuel consumption is  $\frac{10-5}{5} \times 100 = 100\%$  greater than B's. If I switch to B, I will use 5 litres where I would previously have used 10, a change of  $\frac{5-10}{10} \times 100 = -50\%$ . (That is, a reduction, or negative change, of 50%).

### Progress exercise 1.9

1. (a) 81  
(b) 32  
(c) 6 and -6  
(d) 3  
(e) 125  
(f) 3  
(g) 20  
(h)  $\frac{1}{8}$