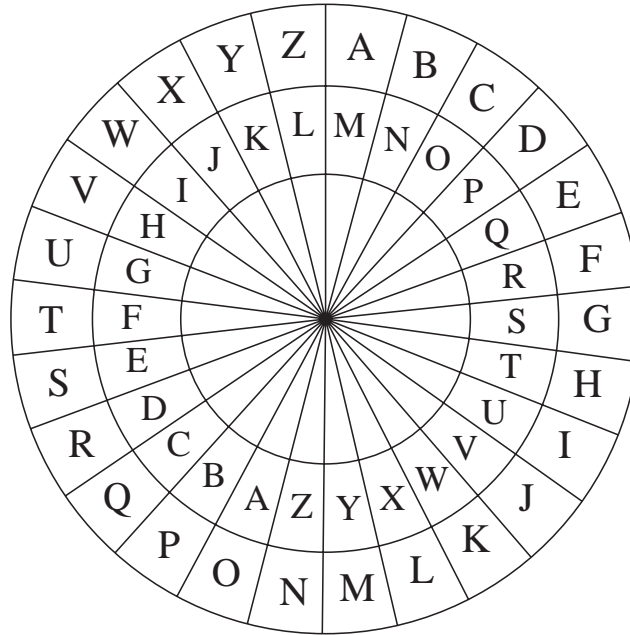


# UNIT 16 Algebra: Linear Equations Extra Exercises 16.1

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1. Use the codewheel below to decipher this word:

S X M P U M F A D E



2. If  $x = 3$ ,  $y = 7$  and  $z = 11$ , calculate:

- |              |               |               |
|--------------|---------------|---------------|
| (a) $x + y$  | (b) $z - y$   | (c) $xy$      |
| (d) $2x$     | (e) $3z$      | (f) $4y$      |
| (g) $3 + 2x$ | (h) $4y - 3x$ | (i) $2z + 5x$ |

3. Simplify these expressions:

- |                         |                        |                         |
|-------------------------|------------------------|-------------------------|
| (a) $a + a + a$         | (b) $2a + 4a$          | (c) $6a - 3a$           |
| (d) $4a + b - 2a$       | (e) $3a + 3b + 2a$     | (f) $6x + 6y - 3x + 2y$ |
| (g) $4s + 3t - 2s + 2t$ | (h) $4t + 3q - 2t + q$ | (i) $3y + 8z - 4z - 2y$ |

## UNIT 16 *Algebra: Linear Equations*    **Extra Exercises 16.2**

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1. What is the output of each of these function machines:

(a)  $6 \longrightarrow \boxed{+ 3} \longrightarrow \boxed{\times 5} \longrightarrow$

(b)  $18 \longrightarrow \boxed{\div 3} \longrightarrow \boxed{+ 11} \longrightarrow$

(c)  $31 \longrightarrow \boxed{- 14} \longrightarrow \boxed{\times 2} \longrightarrow$

(d)  $-2 \longrightarrow \boxed{- 5} \longrightarrow \boxed{\times 5} \longrightarrow$

2. What is the input of each of these function machines:

(a)  $? \longrightarrow \boxed{\times 2} \longrightarrow \boxed{+ 9} \longrightarrow 19$

(b)  $? \longrightarrow \boxed{- 3} \longrightarrow \boxed{\div 4} \longrightarrow 6$

(c)  $? \longrightarrow \boxed{+ 11} \longrightarrow \boxed{\times 4} \longrightarrow 100$

(d)  $? \longrightarrow \boxed{\div 2} \longrightarrow \boxed{- 14} \longrightarrow - 11$

(e)  $? \longrightarrow \boxed{+ 7} \longrightarrow \boxed{\times 7} \longrightarrow 35$

3. A number is multiplied by 4 and then 9 is taken away from this to give 19. What was the first number?

4. At a bus stop, 6 people got off a bus and 13 people got on. If there are now 21 people on the bus, how many were on board before it stopped?



## Extra Exercises 16.1

## Answers

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### 1. GLADIATORS

2. (a) 10 (b) 4 (c) 21  
(d) 6 (e) 33 (f) 28  
(g) 9 (h) 19 (i) 37
3. (a)  $3a$  (b)  $6a$  (c)  $3a$   
(d)  $2a + b$  (e)  $5a + 3b$  (f)  $3x + 8y$   
(g)  $2s + 5t$  (h)  $2t + 4q$  (i)  $y + 4z$

## Extra Exercises 16.2

## Answers

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1. (a) 45 (b) 17 (c) 34 (d) -35
2. (a) 5 (b) 27 (c) 14  
(d) 6 (e) -2
3. 7
4. 14

## Extra Exercises 16.3

Answers

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1. (a) 5 (b) 8 (c) 16  
(d) 12 (e)  $2\frac{1}{2}$  (f) 4  
(g) 10 (h) 6 (i) 5  
(j) 6 (k) 2 (l) 7  
(m) 7 (n) 16 (o) -1

2. (a)  $p = 13 + x$   
(b)  $18 = 13 + x$   
 $x = 5$   
(c)  $22 = 13 + x$   
 $x = 9$

3.  $23 = 2x + 12$   
 $x = 5\frac{1}{2}$  cm

4. (a) 4 (b) 4