ANSWERS: CHAPTER ONE

ASSIGNMENT 1

20 Exercises

# wrong	points
0-3	5 ⎫ Correct
4-6	4 ⎭ any errors
7-20	See an instructor

◊ **1-1 EXERCISES** ◊ (even numbers, page 9)

(There may be several ways to say what these mean in English for even numbers 2-12. Some possibilities are shown here.)

2. the difference between a number M and 5; or some number M minus 5; or M subtract 5
4. the sum of some number P, another number r, and 9.7; or some number P plus another number r plus 9.7; or the total of P, r, and 9.7
6. 0.5 times a number b times another number h; or the product of 0.5, a number b, and another number h; or 0.5 multiplied by b, multiplied by h
8. the quotient of 39 and some number d; or 39 divided by d
10. a number n to the third power; or a number n cubed; or 3 factors of n
12. the second root of some number R; or the square root of R

	list of factors	numerical coefficient
14.	16, C, d	16
16.	m, n, y	1
18.	1.8, a, b^4 or 1.8, a, b, b, b, b	1.8

20.	6nnn	22.	0.7AKK	24.	6n·6n·6n	26.	0.7AKAK
28.	24.01	30.	4913	32.	0.421875	34.	4.6
36.	2.702*	38.	2.7	40.	1.940*		

ASSIGNMENT 2

15 Exercises

# wrong	points
0-2	5 ⎫ Correct
3-4	4 ⎭ any errors
5-15	See an instructor

◊ **1-2 EXERCISES** ◊ (even numbers, page 15)

(There may be several ways to say what these mean in English for even numbers 2-24. Some possibilities are shown here.)

2. 0.7 times A times K squared; or the product of 0.7, A, and K squared; or 0.7 multiplied by A multiplied by K to the second power
4. 0.7 times the quantity, A times K, squared; or the product of 0.7 and the quantity, A multiplied by K, to the second power
6. the difference between 2.8 multiplied by P and R; or 2.8 times P minus R
8. 7/8 times f plus n cubed; or the sum of 7/8 multiplied by f and n cubed
10. 4 times the square root of A; or 4 multiplied by the square root of A
12. b divided by k minus 2; or the quotient of b and k subtract 2
14. the quantity, b minus 2, divided by k; or the quotient of the quantity, b subtract 2, and k
16. the square root of the quantity, c squared minus a squared; or the square root of the difference between c squared and a squared
18. Some number D is equal to 3/7; or D equals 3/7.
20. 1.2 multiplied by the quantity, 5 plus x, is equal to 8; or 1.2 times the sum of 5 and x equals 8.
22. s is equal to the cube root of V; or s equals the third root of V.
24. 2 times A is equal to the product of h and the quantity, B plus b; or 2 multiplied by A equals h times the sum of B and b.
26. > 28. < 30. >

(*marks approximate values.)

ASSIGNMENT 3

10 Exercises

# wrong	points
0-1	5 | Correct
2-3	4 | any errors
4-10	See an instructor

◊ **1-3 EXERCISES** ◊ (even numbers, page 22)

(Different literal numbers may be used than those shown.)

2. p4
4. r - t
6. $\sqrt[3]{w}$
8. y = Z
10. 5C - 11d
12. h + 2h + 5.4
14. $16 - n^2 = 8.5$
16. 2(5 + q) - 4
18. $\frac{T - 4}{V}$
20. $z = \frac{2}{3}(c + 15)$

ASSIGNMENT 4

10 Exercises

# wrong	points
0-1	5 | Correct
2-3	4 | any errors
4-10	See an instructor

◊ **1-4 EXERCISES** ◊ (even numbers, page 29)

2. 1.6
4. 0.9
6. 0.05
8. 133,770
10. 20.4
12. 2.1
14. 11.728*
16. s = 2.772*
18. F = 68
20. s = 60

ASSIGNMENT 5

10 Exercises

# wrong	points
0-1	5 | Correct
2-3	4 | any errors
4-10	See an instructor

◊ **1-5 EXERCISES** ◊ (even numbers, pages 37-38)

2. $s = \frac{1}{4}P$
4. $P = 2L + \pi W$
6. $W = \frac{A}{2H} - L$
8. $r = 0.56\sqrt{V/h}$
10. $V = \frac{4}{3}\pi(R^3 - r^3)$

12. s = 22.5 The base of one side of this enclosure is 22.5 (feet).
14. P = 400.1* The perimeter distance around this sports track is about 400.1 (metres).
16. W = 34.5 The width of this rectangular prism is 34.5 (centimetres).
18. r = 5.32 The approximate radius of this cylinder is 5.32 (feet).
20. V = 10936.93* The volume amount of plastic needed to mold this hollow spherical tank is about 10,937 (cubic centimetres).

(*marks approximate values.)

ANSWERS: CHAPTER TWO

ASSIGNMENT 6

10 Exercises

# wrong	points
0-1	5 | Correct
2-3	4 | any errors
4-10	See an instructor

◊ **2-1 EXERCISES** ◊ (even numbers, page 46)

(Units of measurement must be included where appropriate.)

2. $11.7CD$
4. $96b^3$
6. $49y^3$
8. $6k^2p^3$
10. $144b^2$
12. $14.7\ in^2$
14. $(9.1\ m)h$
16. $24\ yd^3$
18. $s = 22.5\ cm$
20. $V = 714.889^*\ ft^3$

ASSIGNMENT 7

10 Exercises

# wrong	points
0-1	5 | Correct
2-3	4 | any errors
4-10	See an instructor

◊ **2-2 EXERCISES** ◊ (even numbers, page 54)

(Units of measurement must be included where appropriate.)

2. $\frac{1}{3}$ or 0.333^*
4. $\frac{5}{4B}$ or $\frac{1.25}{B}$
6. $1.7n^2$
8. $\frac{r}{2}$ or $0.5r$
10. $\frac{6}{x^2}$
12. $3\ mm$
14. 0.639^*
16. $6.25\ yd$
18. $T = 0.719^*$
20. $H = 6.75\ ft$

ASSIGNMENT 8

10 Exercises

# wrong	points
0-1	5 | Correct
2-3	4 | any errors
4-10	See an instructor

◊ **2-3 EXERCISES** ◊ (even numbers, page 59)

(Units of measurement must be included where appropriate.)

2. $60 + 4T$
4. $3m - 15$
6. $\frac{1}{5}r + 4$ or $0.2r + 4$
8. $84 - 24w$
10. $12 + 43.2b$
12. $3k + 15e$
14. $0.5hp + 3.5p$
16. $40b - 20b^2$
18. $2L + 46\ m$
20. $76.7\ ft^3 - (13\ ft)t$

(*marks approximate values.)

ASSIGNMENT 9

20 Exercises

# wrong	points	
0-3	5	Correct
4-6	4	any errors
7-20	See an instructor	

◊ **2-4 EXERCISES** ◊ (even numbers, pages 68-69)

(Units of measurement must be included where appropriate.)

2. $6p$, $-p$	4. 18rs, 5.9rs	6. none
8. $9m^2$, $-5m^2$	10. K	12. 33.4m
14. 10bc	16. $4r^3$	18. $14\frac{1}{2}c - 6$
20. 8.1m + 12	22. 2.9S + 2	24. 4w - 6t
26. 8n + 40.4	28. $x^2 + 4$	
30. 6 ft - 5.1y (Not like terms. No further simplification possible.)		
32. 1.2 mm	34. 12 yd^3	36. 1.4 cm - 34
38. T = 90°	40. P = 5 km	

ASSIGNMENT 10

20 Exercises

# wrong	points	
0-3	5	Correct
4-6	4	any errors
7-20	See an instructor	

◊ **2-5 EXERCISES** ◊ (even numbers, pages 76-77)

(Units of measurement must be included where appropriate.)

2. $30.1x^2 - 9.1$	4. 6m + 5	6. 16
8. 5v - 5	10. 11 + 17ap	12. $24b^2$
14. 2x + 2	16. 20.7 + 10t	18. $22h^2 - 8h$
20. 13a - 10.8	22. 6w + 6	24. $4\frac{1}{2}f - 15$
26. 36d - 9	28. k - 2	30. 2.382^* ft^2
32. 35.7 cm	34. 5.6 mi^2	36. $P = 400.1^*$ m
38. w = 34.5 ft	40. $V = 10936.93^*$ mm^3	

(*marks approximate values.)

ANSWERS: CHAPTER THREE

ASSIGNMENT 11

15 Exercises

# wrong	points
0-2	5 | Correct
3-4	4 | any errors
5-15	See an instructor

◊ **3-1 EXERCISES** ◊ (even numbers, page 86)

2. a = 6.4	4. R = 3.9	6. W = 23
8. g = $3\frac{3}{8}$	10. B = 4.583*	12. j = 1.544*
14. x = 51	16. 0 = p	18. $19\frac{5}{6}$ = M
20. 3.5 = n	22. 100 = k	24. 1.567* = y
26. d = 13	28. T = 13	30. 0.47 = q

ASSIGNMENT 12

15 Exercises

# wrong	points
0-2	5 | Correct
3-4	4 | any errors
5-15	See an instructor

◊ **3-2 EXERCISES** ◊ (even numbers, page 95)

2. $1\frac{2}{5}$ or 1.4 = m	4. f = 45	6. y = 13
8. q = $\frac{9}{16}$	10. y = 5	12. 0.4 = R
14. A = 1	16. 18 = t	18. g = 11
20. v = 2	22. w = 3	24. p = $1\frac{1}{3}$ or 1.333*
26. 4 = D	28. k = 5	30. 2 = y

ASSIGNMENT 13

15 Exercises

# wrong	points
0-2	5 | Correct
3-4	4 | any errors
5-15	See an instructor

◊ **3-3 EXERCISES** ◊ (even numbers, page 102)

2. d = 12	4. y = $1\frac{2}{5}$ or 1.4	6. 2 = m
8. t = 11.429*	10. $1\frac{8}{9}$ or 1.889* = b	12. n = 4
14. h = 2	16. 3 = T	18. x = 14
20. y = 1	22. g = 2	24. L = 5
26. x = 8	28. 3 = b	30. y = 7

(*marks approximate values.)

ASSIGNMENT 14

15 Exercises

# wrong	points	
0-2	5	Correct
3-4	4	any errors
5-15	See an instructor	

◊ **3-4 EXERCISES** ◊ (even numbers, pages 111-113)

(Different literal numbers may be used than those shown for even numbers 2-6.)

2. $\frac{3}{2}f = 15$ The amount is 10. (f = 10)
4. 9 = 6h + 3.5 The number is about 0.917. (0.917* = h)
6. 2(K - 1.3) = 7 The number is 4.8. (K = 4.8)

(Units of measurement must be included where appropriate.)

8. 5.6 = t
10. 8 m = P
12. 4 in = B
14. $C = \frac{A}{H}$ The length of the side adjacent to the angle in this triangle is about 4.50 centimetres. (4.4968 cm = A)
16. $A = \pi r(s + r)$ The slant height of this cone is about 2 feet. (2.001* ft = s)
18. 7.242* in = r The radius of the circular flywheel is about 7.24 inches.
20. 114.286* cm = h The tank should be about 114.3 centimetres high.
22. 1575 m = a The other two sides of the triangular fireline perimeter are each 1575 metres long.
24. 8.796* ft = H The rectangular hole should be 8.8 feet deep.
26. 9.947* ft = h The cylindrical tank should have a height of about 9.95 feet.
28. 9.354* m = h The conical storage bin should be about 9.354 metres high.
30. 10 cm = H The diesel fuel tank must be 10 centimetres long.

(*marks approximate values.)

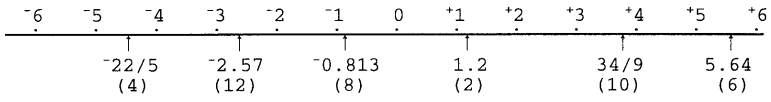
ANSWERS: CHAPTER FOUR

ASSIGNMENT 15

30 Exercises

# wrong	points
0-4	5 | Correct
5-9	4 | any errors
10-30	See an instructor

◊ **4-1 EXERCISES** ◊ (even numbers, page 125)



14.	<	16.	<	18.	>	20.	>
22.	⁻11	24.	⁻33	26.	7	28.	17
30.	⁻5	32.	⁻7	34.	6	36.	⁻9
38.	⁻8	40.	⁻17	42.	⁻8	44.	8
46.	⁻12	48.	⁻30	50.	32	52.	51
54.	6	56.	3	58.	⁻3	60.	⁻2

ASSIGNMENT 16

20 Exercises

# wrong	points
0-3	5 | Correct
4-6	4 | any errors
7-20	See an instructor

◊ **4-2 EXERCISES** ◊ (even numbers, pages 134-135)

2. ⁻1.6
4. ⁻5.5
6. ⁻0.05
8. 8.4
10. ⁻7.3
12. ⁻8
14. a = ⁻15
16. s = ⁻48
18. ⁻32a
20. $-\frac{1}{3}$ or ⁻0.333*
22. $1.7n^2$
24. ⁻3.7m
26. ⁻5.1S + 2 or 2 - 5.1S
28. ⁻2w - 6
30. ⁻15 - 3m
32. ⁻24w + 84 or 84 - 24w
34. ⁻2m + 7 or 7 - 2m
36. ⁻36d + 9 or 9 - 36d
38. -2t - 17.1
40. ⁻11.9x - 9.1

ASSIGNMENT 17

15 Exercises

# wrong	points
0-2	5 | Correct
3-4	4 | any errors
5-15	See an instructor

◊ **4-3 EXERCISES** ◊ (even numbers, page 144)

2. W = 9
4. 6 = f
6. ⁻13 = T
8. x = ⁻51
10. f = ⁻45
12. $-\frac{7}{5}$ or ⁻1.4 = m
14. ⁻18 = t
16. y = ⁻5
18. ⁻3 = w
20. y = ⁻1
22. t = ⁻14.286*
24. x = ⁻14
26. x = 4
28. ⁻43 = x
30. ⁻6.667* = C

(*marks approximate values.)

ANSWERS: CHAPTER FIVE

ASSIGNMENT 18

20 Exercises

# wrong	points
0-3	5 | Correct
4-6	4 / any errors
7-20	See an instructor

◊ **5-1 SELF-TEST** ◊ (all numbers, page 165)

(Units of measurement must be included.)

1. 26,400 ft
2. 4 yd
3. 36 in
4. $\frac{1}{20}$ hr or 0.05 hr
5. 1.808* ft
6. 300 sec
7. 50.92 qt
8. 126,720 in
9. 4.6625 gal (anti-freeze)
10. 182,400 doses (drug)

◊ **5-2 SELF-TEST** ◊ (all numbers, page 174)

(Units of measurement must be included.)

1. 500 mm
2. 1200 cm
3. 1.2 km
4. 0.0976 m
5. 1.867 cm
6. 0.0964 km
7. 18,000 m
8. 1.2 m (shaft length)
9. 180,000 cm (wire)
10. 154 cm (cabinet length)

ASSIGNMENT 19

20 Exercises

# wrong	points
0-3	5 | Correct
4-6	4 / any errors
7-20	See an instructor

◊ **5-3 SELF-TEST** ◊ (all numbers, page 182)

(Units of measurement must be included.)

1. 0.0128 kg
2. 0.00093 litre
3. 1,800,000 ml
4. 19,600 mg
5. 0.180 kl
6. 112,900 mg
7. 90,000 mg
8. 0.0187 litre (liquid)
9. 0.0197 g (pigment)
10. 0.012 kl (drug)

◊ **5-4 SELF-TEST** ◊ (all numbers, page 187)

(Answers may vary slightly as accuracy of conversion units used may differ. Units of measurement must be included.)

1. 5 in
2. 54,885.6* g
3. 759.84* in
4. 1041.3* g
5. 3.36* m
6. 1466.9* cm^3
7. 244.6* km
8. 71.9* litre (fuel)
9. 71,900* cm^3 (sludge)
10. 4.67* ft (window width)

(*marks approximate values.)

ASSIGNMENT 20

20 Exercises

# wrong	points	
0-3	5	Correct
4-6	4	any errors
7-20	See an instructor	

◊ **5-5 SELF-TEST** ◊ (all numbers, page 198)

(Answers may vary slightly as accuracy of conversion units used may differ. Units of measurement must be included.)

1. 77.4192 cm^2
2. 22.48* yd^2
3. 17.28 in^3
4. 800 mm^3
5. 540,000 cm^2
6. 6.067 yd^2
7. 9400 m^2
8. 1.93* mi^2 (forest land)
9. 350.81* yd^3 (concrete)
10. 1200 cm (tape)

◊ **5-6 SELF-TEST** ◊ (all numbers, page 208)

(Units of measurement must be included.)

1. 5.84 m
2. 1 $\frac{mi}{min}$
3. 18 $\frac{mg}{mm^3}$
4. 38.88 $\frac{ton}{day}$
5. 9 km 3000 cm
6. 3 yd 29 in
7. 12,960 $\frac{gal}{day}$
8. 0.0128 $\frac{litre}{hr}$ (lubricant)
9. 25.28* $\frac{m}{sec}$ (car)
10. 486 $\frac{lb}{yd^2}$ (sheet metal)

(*marks approximate values.)

ANSWERS: CHAPTER SIX

ASSIGNMENT 21

10 Exercises

# wrong	points
0-1	5 | Correct
2-3	4 | any errors
4-10	See an instructor

◊ **6-1 SELF-TEST** ◊ (all numbers, page 216)

1. $\frac{3}{7}$ or 3:7
2. $\frac{3}{1}$ or 3 or 3:1
3. $\frac{75}{19}$ or 75:19
4. $\frac{1}{2}$ or 1:2
5. 4:6:5
6. 6000:2000:17 or 3000:1000:8.5
7. 1:3.3:4
8. $\frac{18}{11}$ or 18:11
9. $\frac{1}{9}$ or 1:9
10. 3 drugs--181.82* litres, 318.18* litres, 500 litres

ASSIGNMENT 22

10 Exercises

# wrong	points
0-1	5 | Correct
2-3	4 | any errors
4-10	See an instructor

◊ **6-2 SELF-TEST** ◊ (all numbers, page 223)

(Units of measurement must be included.)

1. 107.7* kg
2. 93.75 ml
3. 20 lathes
4. 12.5* miles
5. 24 gears
6. 7.2 ft
7. 3.25* in
8. 44.1* hrs
9. 113 rivets
10. 32.1* hrs

(*marks approximate values.)

ANSWERS: CHAPTER SEVEN

ASSIGNMENT 23

27 Exercises

# wrong	points
0-4	5 | Correct
5-8	4 | any errors
9-20	See an instructor

◊ **7-1 SELF-TEST** ◊ (all numbers, pages 235-236)

(Angle measurement answers for numbers 18, 20, 22, and 23 may vary.)

1. g	2. f	3. i
4. b	5. c	6. h
7. d	8. a	9. e
10. n	11. o	12. k
13. q	14. l	15. m
16. j	17. p	18. 66°, acute
19. 90°, right	20. 30°, acute	21. 180°, straight
22. 162°, obtuse	23. 28°, acute	24. 4.5 in
25. 47°	26. 60°	27. right (90°), 4 in

ASSIGNMENT 24

8 Exercises

# wrong	points
0-1	5 | Correct
2	4 | any errors
3-8	See an instructor

◊ **7-2 SELF-TEST** ◊ (all numbers, page 243)

(Units of measurement must be included.)

1. 38 cm	2. 67.42* cm
3. 15.62* ft or 187.4* in	4. 24 ft 4 in or 292 in
5. 49.13* cm	6. 24.6 cm
7. 10.59* ft or 10 ft 7.1* in	8. P inside = 20 ft; P outside = 48 ft

ASSIGNMENT 25

13 Exercises

# wrong	points
0-2	5 | Correct
3	4 | any errors
4-13	See an instructor

◊ **7-3 SELF-TEST** ◊ (all numbers, page 257)

(Units of measurement must be included.)

1. 336 cm^2	2. 63 cm^2
3. 28.27* ft^2	4. 56 cm^2
5. 39.28* ft^2	6. 53.6 ft^2
7. 840 cm^2	8. 8.552* ft^2 or 1231.5* in^2
9. 1963.5* cm^2	10. 282.7* cm^2 or 28,270* mm^2
11. 900 in^2	12. 16.2* gal (2024 ft^2)
13. 31.16 cm^2	

(*marks approximate values.)