

Chapter 5 REAL NUMBERS

Do not use calculators unless stated otherwise.

- If 10 km south is indicated by -10 , how would you indicate 10 km north?
- If $+100$ indicates a profit of \$100, how would a loss of \$91 be indicated?
- If a deposit of \$600 is represented by $+600$, how would you represent a withdrawal of \$60?
- If 5 flights down is represented by -5 , how would you represent 14 flights up?
- Write down the larger number in each case.

(i) $-1, -2$	(ii) $-6, 6$	(iii) $-7, 3$	(iv) $0, -3$	(v) $1, -10$
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- Write down the smaller number in each case.

(i) $-30, 7$	(ii) $\frac{-12}{2}, -5$	(iii) $0, \frac{-4}{5}$	(iv) $-1, 0$	(v) $-13, 12$
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Add the following.

- | | | | |
|--------------------|------------------|--------------------|---------------------|
| 7. $(-2) + (-2)$ | 8. $(-5) + (-9)$ | 9. $(-11) + (-12)$ | 10. $(-1) + 1$ |
| 11. $(-7) + 3$ | 12. $14 + (-9)$ | 13. $(-29) + 15$ | 14. $(-29) + (-15)$ |
| 15. $(-41) + (41)$ | 16. $39 + (-33)$ | 17. $0 + (-56)$ | 18. $(-56) + (-0)$ |

- An airplane descended 150 m from an altitude of 650 m and then ascended 830 m immediately. At what altitude was the airplane flying?
- Beginning with a temperature of 24°C , the temperature rises by 8°C , then drops by 14°C and finally rises by 2°C . What is the temperature after the above changes?

Evaluate the following.

- | | | | | |
|----------------|-------------------|--------------------|-----------------|----------------|
| 21. $5 - (-2)$ | 22. $(20) - (-8)$ | 23. $(-7) - (-17)$ | 24. $14 - (-6)$ | 25. $-9 - 91$ |
| 26. $-95 - 5$ | 27. $-75 - 125$ | 28. $7 - 27$ | 29. $18 - 118$ | 30. $35 - 100$ |

Evaluate the following.

- | | | | |
|---------------------------|--------------------------|------------------------|---------------------------|
| 31. $-18 + 10 + (-2)$ | 32. $-11 + 35 + (-89)$ | 33. $28 + 22 + (-100)$ | 34. $16 + (-18) - (-2)$ |
| 35. $14 + 15 - 30$ | 36. $35 - (-6) - 40$ | 37. $17 - 20 - (-8)$ | 38. $-18 - (-10) + (-12)$ |
| 39. $-(-13) + 27 + (-20)$ | 40. $37 + (-29) + (-18)$ | 41. $26 - (15 - 9)$ | 42. $47 - (-16 - 17)$ |

Evaluate the following.

- | | |
|------------------------------------|---|
| 43. $(-5 + 2) - (-13)$ | 44. $[-6 - (-16)] + (-15)$ |
| 45. $(-17) + [6 + (-9)]$ | 46. $15 - (-3) - 14 + (-24)$ |
| 47. $31 + (-1) + (-18) - (-28)$ | 48. $-54 + (-46) + (-100) - (-150) + (-1) - (-2) + (-11)$ |
| 49. $39 + [-12 + (-26)] - (-99)$ | 50. $[-2 + (-3) + (-5)] + [10 - (-13) - (-7)] + (-1)$ |
| 51. $[-23 - (-18)] - [36 + (-41)]$ | 52. $-[-(-21) + (-27)] - [-66 - (-70)]$ |

Evaluate the following.

- | | | |
|------------------------------------|-------------------------------------|----------------------------------|
| 53. $8 \times (-5)$ | 54. $15 \times (-3)$ | 55. -6×12 |
| 56. -11×9 | 57. $-4 \times (-16)$ | 58. $-7 \times (-14)$ |
| 59. $(-1) \times (-1) \times (-1)$ | 60. $(-19) \times (-3) \times (-2)$ | 61. $(-25) \times 4 \times (-8)$ |

- | | | |
|--|---|---|
| 62. $(-20) \times (-5) \times 9$ | 63. $15 \times (-4) \times (-3)$ | 64. $-12 \times 5 \times 7$ |
| 65. $8 \times (-5) \times 7$ | 66. $16 \times 2 \times (-10)$ | 67. $(-2) \times (-3) \times (-4) \times (-5)$ |
| 68. $(-5) \times (-4) \times (-12) \times 5$ | 69. $(-8) \times (-3) \times 5 \times (-6)$ | 70. $(-2) \times 5 \times (-9) \times (-7)$ |
| 71. $4 \times (-4) \times (-5) \times (-16)$ | 72. $5 \times 6 \times (-1) \times (-12)$ | 73. $(-1) \times (-8) \times 3 \times 5$ |
| 74. $9 \times (-10) \times 4 \times (-25)$ | 75. $13 \times 3 \times (-1) \times 4$ | 76. $10 \times (-4) \times 2 \times 5$ |
| 77. $(-5)^2 \times (-2)^3 \times 3 \times (-1)$ | 78. $(-1)^3 \times (-3)^2 \times 2^3 \times (-5) \times (-10)$ | |

Evaluate the following.

- | | | | |
|-----------------------------------|-------------------------------------|--|--------------------------------------|
| 79. $-18 \div 3$ | 80. $-18 \div (-3)$ | 81. $-4 \div (-16)$ | 82. $45 \div (-9)$ |
| 83. $56 \div (-7)$ | 84. $625 \div (-5)$ | 85. $(-75) \div (-25)$ | 86. $(-100) \div (-4)$ |
| 87. $36 \div (-12)$ | 88. $90 \div (-18)$ | 89. $7 \div (-49)$ | 90. $-77 \div (11)$ |
| 91. $64 \div (-16)$ | 92. $45 \div (-3) \div (-5)$ | 93. $(-72) \div (-9) \div 2$ | 94. $(-108) \div 2 \div (-6)$ |
| 95. $140 \div (-7) \div 4$ | 96. $(-264) \div 11 \div 8$ | 97. $(-390) \div (-13) \div (-5)$ | |

Evaluate the following.

- | | | |
|--|---|---|
| 98. $[(-3) + (-4)] \div 7$ | 99. $(-56) \div [7 + (-14)]$ | 100. $(-9) \times (-4) \div (-12)$ |
| 101. $[2 \times (-3) + (-12)] \div (-9)$ | 102. $[23 - (-5)] \div (-7)$ | 103. $26 \div [(-9) + (-4)]$ |
| 104. $\frac{(-2) \times (-5) + (-20)}{(-10)}$ | 105. $\frac{(-123) \times [19 + (-19)]}{38}$ | 106. $\frac{-18 + (-3)}{2 \times (-4) + (-3) \times (-5)}$ |
| 107. $\frac{15 \times (-4) - (-6) \times 5}{(-8) \times (-3) - (-1) \times (-9)}$ | 108. $(-10) \times (-6) \div [(-1) - (-6)] + (-10)$ | |
| 109. $10\,000 \div [5 + (-25)]$ | 110. $144 \div (-6) \div 3 \times (-7) \times (-5)$ | |
| 111. $[660 + (-264)] \div [(-264) \div (-6)]$ | 112. $[(-250) \times 4 + 280 \times (-6)] \div [-4 + (-6)]$ | |
| 113. $129 \div (-3) \times [(-3) + (-2)] - (-25)$ | 114. $[(-282) \times (-5) - (-1\,236)] \div [5 - (-4)]$ | |
| 115. $[(-4) \times (-5)^2 - (-3)^3 \times 2] \div (-23)$ | 116. $10 \times \{ [(-20) \div (-2) + 10]^2 + (-8) - (20 \div 2)^2 + (-2) \} \times 100$ | |

Simplify the following.

- | | | |
|--|---|---|
| 117. $\frac{1}{4} - \frac{3}{4}$ | 118. $-\frac{11}{20} + \frac{7}{20}$ | 119. $-\frac{13}{15} - \left(-\frac{3}{15}\right)$ |
| 120. $-\frac{15}{49} + \left(-\frac{6}{49}\right)$ | 121. $\frac{2}{15} - \frac{4}{15} - \frac{7}{15}$ | 122. $-\frac{9}{22} + \frac{5}{22} - \frac{7}{22}$ |
| 123. $-\frac{11}{35} + \left(-\frac{13}{35}\right) - \left(-\frac{19}{35}\right)$ | 124. $-\frac{9}{56} - \frac{11}{56} - \left(-\frac{13}{56}\right)$ | 125. $-4\frac{27}{28} + \left(-1\frac{3}{28}\right) - \left(-6\frac{9}{28}\right)$ |
| 126. $8\frac{5}{18} + \left(-4\frac{7}{18}\right) - 2\frac{11}{18} - \left(-\frac{13}{18}\right)$ | | |

Evaluate the following, expressing each answer in the simplest form.

- | | | |
|--|---|---|
| 127. $-2\frac{1}{3} - \left(-1\frac{1}{2}\right)$ | 128. $\frac{2}{5} - \left(-\frac{1}{6}\right)$ | 129. $-\left(-1\frac{1}{5}\right) + \left(-\frac{1}{3}\right)$ |
| 130. $2\frac{5}{9} - 3\frac{1}{4}$ | 131. $2\frac{1}{4} + \left(-1\frac{3}{5}\right)$ | 132. $-\left(-\frac{7}{8}\right) - 1\frac{3}{4}$ |
| 133. $9\frac{1}{4} + \left(-7\frac{3}{5}\right)$ | 134. $-4\frac{2}{9} - \left(-1\frac{1}{6}\right)$ | 135. $-2\frac{3}{4} + \left(-1\frac{1}{2}\right) - \left(-1\frac{2}{3}\right)$ |
| 136. $-6\frac{4}{9} - 3\frac{3}{4} - 3\frac{5}{9}$ | 137. $-\left(-3\frac{4}{7}\right) + 1\frac{2}{5} - \left(-\frac{3}{7}\right)$ | 138. $\frac{2}{3} - \left(-3\frac{3}{20}\right) + \left(-\frac{2}{5}\right)$ |
| 139. $-3\frac{4}{5} - 1\frac{3}{10} - \left(-2\frac{3}{4}\right)$ | 140. $\left(-\frac{1}{2} + \frac{1}{3}\right) + \left[\frac{1}{4} + \left(-\frac{1}{3}\right)\right] + \left(-\frac{1}{20}\right)$ | |

Evaluate the following. Express each answer in its lowest terms.

$$141. 5 \times \left(-2\frac{2}{5}\right)$$

$$142. (-16) \div \left(-\frac{4}{5}\right)$$

$$143. 16\frac{3}{10} \times (-5)$$

$$144. \left(-\frac{7}{18}\right) \times \left(-\frac{9}{14}\right)$$

$$145. \left(-\frac{4}{9}\right) \times \left(\frac{3}{14}\right)$$

$$146. 15\frac{1}{6} \div (-5)$$

$$147. \left(-\frac{5}{6}\right) \div \left(-\frac{3}{4}\right)$$

$$148. \left(-7\frac{1}{3}\right) + 1\frac{5}{6}$$

$$149. \frac{9}{11} \div \left(-\frac{4}{5}\right)$$

$$150. (-4) \div \left(-\frac{1}{4}\right) \times (-4)$$

$$151. \left(-2\frac{2}{5}\right) \times \frac{5}{6} \div (-13)$$

$$152. 1\frac{7}{15} \div \left(-17\frac{2}{7}\right) \times 3\frac{3}{14}$$

$$153. \left(-2\frac{5}{7}\right) \div \left[1\frac{1}{3} \times \left(-\frac{3}{4}\right)\right]$$

$$154. 3\frac{3}{5} \times (-6) \div \left(-4\frac{4}{5}\right)$$

Simplify the following.

$$155. 20 \times \left(\frac{3}{4} - \frac{4}{5}\right)$$

$$156. \left(\frac{7}{27} - \frac{5}{36}\right) \times (-9)$$

$$157. \left(\frac{1}{4} - \frac{3}{4}\right) \div \left(-\frac{1}{4}\right)$$

$$158. \left[\left(-9\frac{1}{4}\right) - \left(-7\frac{3}{5}\right)\right] \div 2\frac{3}{4}$$

$$159. \left(-\frac{3}{4}\right) \times 1\frac{1}{2} + \frac{3}{4} \times \left(-2\frac{1}{2}\right)$$

$$160. \frac{1}{4} \div \left(-\frac{3}{4}\right) \times \left(-1\frac{1}{4}\right)$$

$$161. 7\frac{3}{5} \times (-45) - 2\frac{3}{5} \div \left(-\frac{1}{45}\right)$$

$$162. 5 \times \left(-\frac{5}{13}\right) \div \left(\frac{1}{3} - \frac{7}{12}\right) \times (-26)$$

$$163. \left(-12\frac{1}{2}\right) + 1\frac{2}{3} \div (-4) - \frac{5}{7} \times \left(-2\frac{4}{5}\right)$$

$$164. \left[\left(-4\frac{2}{9}\right) - \left(-1\frac{1}{6}\right)\right] \times \left(-\frac{9}{11}\right) - \left(4\frac{1}{3} + 2\frac{3}{4}\right) \div \left(-4\frac{1}{4}\right)$$

$$165. 2\frac{1}{11} \div \left(-1\frac{7}{15}\right) \div \left(-17\frac{2}{7}\right) \times \left(-3\frac{3}{14}\right) + \left(-\frac{21}{22}\right)$$

$$166. \left(-5\frac{17}{20}\right) \times \left(-1\frac{1}{3}\right) + 2\frac{1}{2} \div \left(-4\frac{1}{6}\right) - \left(-3\frac{1}{4}\right)$$

Simplify the following.

$$167. \frac{-2\frac{3}{5} + 1\frac{1}{2}}{(-3\frac{2}{3})}$$

$$168. \frac{\left(-\frac{3}{5}\right) + \left(-\frac{1}{5}\right)}{-1 + \frac{1}{5}}$$

$$169. \frac{4\frac{1}{2} \times \left(-5\frac{2}{3}\right) - 6}{(-6\frac{3}{4})}$$

$$170. \frac{-7 + 1\frac{3}{5}}{-2\frac{3}{5} + \frac{2}{5} \times \left(-\frac{1}{4}\right)}$$

$$171. \frac{\left[\frac{1}{5} - \left(-\frac{1}{4}\right)\right] + \left(-\frac{1}{20}\right)}{\left(-1\frac{2}{5}\right) \times \left(-1\frac{1}{4}\right)}$$

$$172. \frac{-4\frac{3}{8} \times \left(3 - 1\frac{2}{7}\right)}{\left(-2\frac{1}{2} - 4\right) + \left(-1\frac{11}{15}\right)}$$

$$173. \frac{-\frac{1}{2} + \frac{1}{3} + \left(-\frac{1}{4}\right)}{-1 - 1\frac{1}{8} + (-3)}$$

$$174. \frac{-1 - \frac{1}{5}}{-1 - \frac{1}{-1 - \frac{2}{3}}}$$

$$175. \frac{-6}{-4 + \frac{1}{-\frac{1}{2} - (-3)}}$$

$$176. \frac{1 + \frac{1}{-1 - \frac{1}{2}}}{-1 + \frac{1}{\frac{1}{3} - 1}}$$

Evaluate the following exactly.

177. $2.45 - (-0.312)$

179. $(-1.25) \times (-8)$

181. $16.4 - (-3.7) + (-2.55)$

183. $-0.65 + (-2.1) \times (9.6 - 10.2)$

185. $6.304 \div (-1.97) + (-19.7) \times (-1.8)$

178. $2.35 + (-4)$

180. $(-2.002) \div 9.1$

182. $(-1.5)^2 - 2 \times (-0.2)^3$

184. $30 \times (-0.4) \times (-2.5)$

186. $(-37.6) \times (-3.1) - 4(2.55 - 3.7)$

Use a calculator to evaluate the following. Give your answers correct to 3 decimal places.

187. $\left(0.4658 - 3\frac{2}{15}\right) \times \left(-1\frac{11}{13}\right)$

188. $\sqrt{246} \times (-0.555) + (-1.2389)$

189. $\left(-11\frac{6}{17}\right) + \left(5.96 - 9.368 \times 2\frac{98}{99}\right)$

190. $[-4.749 - 6.558 \times (-2.094)^3] \div \sqrt[3]{-1.999}$

191. $\pi \times (4.119)^2 \div (2.008) + \left(31.709 - \frac{\pi \times (8.143)^2}{7.985}\right)$

192. $-\sqrt{37.089} \times \sqrt[3]{-65.678} - \pi \times [(-3.917) + (-2.007)]^2$

193. $\left[\left(2.75 - 13\frac{2}{9}\right) \div \left(-11\frac{5}{7}\right) - \left(-12\frac{3}{5}\right)\right] \times \left(-\frac{55}{97}\right)$

194. $\left\{\left(\frac{1}{3}\right)^2 - \sqrt[3]{\frac{8}{33}} \times \left[-\sqrt{\frac{5}{6}} - (-0.375)^3\right]\right\} \times [-\pi + (-6.5)]$

195. $\frac{(-49)^3 + [-17 - (\sqrt{4 \times 5} - 10.99^2)] + \sqrt[3]{4 \times 7}}{-\pi + \left(\sqrt[3]{(-2\frac{1}{2}) \times \frac{5}{7}}\right)}$

196. $\frac{\sqrt[3]{1\frac{1}{3}} - \left(\frac{2}{3} + (0.75)^2\right) + \left(\sqrt{0.8} + \left(\frac{3}{7}\right)^3\right) + 1\frac{33}{86} + (-2.5)}{\left[1\frac{1}{6} - (-0.375) + (-0.75)\right] + \pi - \left[-0.35 - \left(-\frac{1}{3}\right)\right] + 0.1}$

222. 37-129 223. 0-9
 224. 0-002 9 225. 14-9
 226. 723-58 227. 0-311
 228. 88-50 229. 9-188
 230. (i) 32-968 8 (ii) 32-97
 231. 0-007
 232. (i) 0-056 088 (ii) 0-056 1
 233. (i) 9-625 (ii) 9-6
 234. 57-425 235. 24-187
 236. 0-051 237. 45-991
 238. 0-746 239. 359-185
 240. 42-641 241. 0-633
 242. 0-023 243. 4-877
 244. 20-142 245. 36-303
 246. 96-822 247. 7-765
 248. 0-256 249. 13
 250. \$51-52 251. \$17-44
 252. 23
253. (a) $4\frac{7}{10}$ (b) 4-700 0
 254. (a) $5\frac{41}{110}$ (b) 5-372 7
 255. (a) $3\frac{1}{828}$ (b) 3-001 2
 256. (a) $40\frac{5}{6}$ (b) 40-833 3
 257. (a) $81\frac{6}{7}$ (b) 81-857 1
 258. (a) $154\frac{7}{16}$ (b) 154-437 5
 259. (a) $1\frac{39}{800}$ (b) 1-048 8
 260. (a) $45\frac{15}{26}$ (b) 45-576 9
 261. (a) $\frac{1}{6}$ (b) 0-166 7
 262. (a) $15\frac{113}{120}$ (b) 15-941 7
 263. (a) $\frac{7}{60}$ (b) 0-116 7
 264. 396-37 265. 44-92 266. 1-68
 267. 0-24 268. 29-96 269. 0-69
 270. 0-22 271. 20-37 272. 8-95
 273. 2-77 274. 1-24 275. 0-16
 276. 0-56, 0-67 277. 1-6, 3-2
 278. 2-0, 2-7 279. $\frac{1}{16}, \frac{1}{32}$
 280. $\frac{5}{6}, \frac{6}{7}$ 281. $\frac{9}{11}, \frac{11}{13}$
 282. 1-3, 2-1 283. $\frac{4}{16}, \frac{12}{20}$
 284. $\frac{1}{25}, \frac{1}{49}$ 285. $\frac{25}{216}, \frac{36}{343}$
 286. (i) $\frac{1}{7 \times 8} = \frac{1}{7} - \frac{1}{8}$
 (ii) $\frac{1}{10 \ 100}$
 (iii) $m = 16, n = 17$

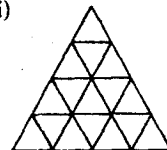
287. (i) $\frac{1}{1 \times 2} + \frac{1}{2 \times 3} + \frac{1}{3 \times 4} + \dots + \frac{1}{4 \times 5} + \frac{1}{5 \times 6} + \frac{1}{6 \times 7} = \frac{6}{7}$
 (ii) $\frac{50}{51}$ (iii) 40 200
 288. (i) $\frac{2}{8 \times 9 \times 10} = \frac{1}{8} - \frac{2}{9} + \frac{1}{10}$
 (ii) $\frac{2}{40 \times 41 \times 42} = \frac{1}{34 \ 440}$
 (iii) $p = 19, q = 20, r = 21$

Test 1A

1. (i) 180 (ii) 9 500
 2. (a) (i) 2×7^2 (ii) $2^3 \times 7$
 (b) 14, 392 or $2^3 \times 7^2$
 3. (a) 1 024 (b) 27
 4. (a) (i) 8 432 700 (ii) 8 432 700
 (iii) 8 433 000
 (b) (i) 80 (ii) 10 000
 5. (i) 29, 23, 17 (ii) 570

Test 1B

1. (i) 8, 1, 6 (ii) 5, 6, 3
 2. (i) 729 (ii) 1 024
 3. (i) 105 (ii) 35; 35, 105
 4. (i) 31, (ii) 2
 5. (i) (ii) 9, 16, 25



- (iii) (a) 36 (b) 100

Test 1C

1. (i) 579 (ii) 130 086
 2. (a) 4 (b) 105 (c) 14
 3. (a) 5 200 (b) 72 (c) 72
 4. (i) 2 116 (ii) 1 444
 5. (i) 187 (ii) 27 (iii) 31, 43

Chapter 5

1. +10 2. -91
 3. -60 4. +14
 5. (i) -1 (ii) 6 (iii) 3
 (iv) 0 (v) 1
 6. (i) -30 (ii) $-\frac{12}{2}$ (iii) $-\frac{4}{5}$
 (iv) -1 (v) -13

7. -4 8. -14 9. -23
 10. 0 11. -4 12. 5
 13. -14 14. -44 15. 0
 16. 6 17. -56 18. -56
 19. 1 330 m 20. 20°C
 21. 7 22. 28 23. 10
 24. 20 25. -100 26. -100
 27. -200 28. -20 29. -100
 30. -65 31. -10 32. -65
 33. -50 34. 0 35. -1
 36. 1 37. 5 38. -20
 39. 20 40. -10 41. 20
 42. 80 43. 10 44. -5
 45. -20 46. -20 47. 40
 48. -60 49. 100 50. 19
 51. 0 52. 2 53. -40
 54. -45 55. -72 56. -99
 57. 64 58. 98 59. -1
 60. -114 61. 800 62. 900
 63. 180 64. -420 65. -280
 66. -320 67. 120 68. -1 200
 69. -720 70. -630 71. -1 280
 72. 360 73. 120 74. 9 000
 75. -156 76. -400 77. 600
 78. -3 600 79. -6 80. 6
 81. $\frac{1}{4}$ 82. -5 83. -8
 84. -125 85. 3 86. 25
 87. -3 88. -5 89. $-\frac{1}{7}$
 90. -7 91. -4 92. 3
 93. 4 94. 9 95. -5
 96. -3 97. -6 98. -1
 99. 8 100. -3 101. 2
 102. -4 103. -2 104. 1
 105. 0 106. -3 107. -2
 108. 2 109. -500 110. -280
 111. 9 112. 268 113. 240
 114. 294 115. 2 116. 0
 117. $-\frac{1}{2}$ 118. $-\frac{1}{5}$ 119. $-\frac{2}{3}$
 120. $-\frac{3}{7}$ 121. $-\frac{3}{5}$ 122. $-\frac{1}{2}$
 123. $-\frac{1}{7}$ 124. $-\frac{1}{8}$ 125. $\frac{1}{4}$
 126. 2 127. $-\frac{5}{6}$ 128. $\frac{17}{30}$
 129. $\frac{18}{15}$ 130. $-\frac{25}{36}$ 131. $\frac{13}{20}$
 132. $-\frac{7}{8}$ 133. $1\frac{13}{20}$ 134. $-3\frac{1}{18}$
 135. $-2\frac{7}{12}$ 136. $-13\frac{3}{4}$ 137. $5\frac{2}{5}$
 138. $3\frac{5}{12}$ 139. $-2\frac{7}{20}$ 140. $-\frac{3}{10}$
 141. -12 142. 20 143. $-81\frac{1}{2}$

144. $\frac{1}{4}$ 145. $-\frac{2}{21}$ 146. $-3\frac{1}{30}$
 147. $1\frac{1}{9}$ 148. -4 149. $-1\frac{1}{44}$
 150. -64 151. $\frac{2}{13}$ 152. $-\frac{3}{11}$
 153. $2\frac{5}{7}$ 154. $4\frac{1}{2}$ 155. -1
 156. $-1\frac{1}{12}$ 157. 2 158. $-\frac{3}{5}$
 159. -3 160. $1\frac{3}{16}$ 161. -225
 162. -200 163. $-10\frac{11}{12}$ 164. $4\frac{1}{6}$
 165. $\frac{19}{22}$ 166. $10\frac{9}{20}$ 167. $\frac{3}{10}$
 168. 1 169. $4\frac{2}{3}$ 170. 2
 171. $-5\frac{1}{7}$ 172. -2 173. $\frac{2}{3}$
 174. 3 175. $1\frac{2}{3}$ 176. $-\frac{2}{15}$
 177. 2.762 178. -0.5875
 179. 10 180. -0.22
 181. 17.55 182. 2.266
 183. 0.61 184. 30
 185. 32.26 186. 121.16
 187. 4.925 188. 7.026
 189. 0.515 190. -44.030
 191. 32.165 192. 12.605
 193. -7.651 194. 0.313
 195. 271.344 196. -5.523

Chapter 6

1. C 2. A 3. D 4. C
 5. D 6. D 7. E 8. B
 9. C 10. B 11. C 12. B
 13. D 14. B 15. D 16. A
 17. D 18. C 19. A 20. B
 21. C 22. D 23. B 24. D
 25. C 26. C
 27. (i) 5.620 km (ii) 900 cm
 (iii) 32 000 g (iv) 50 kg
 28. (i) 4 cm (ii) 24 cm
 (iii) 107 cm (iv) 655 cm
 29. (i) 14.0 kg (ii) 57.5 kg
 (iii) 108.4 kg (iv) 763.2 kg
 30. (i) 7.0 cm² (ii) 40.1 cm²
 (iii) 148.3 cm² (iv) 168.4 cm²
 31. 3 32. 4 33. 2 34. 4
 35. 1 36. 5 37. 2 38. 2
 39. 5 40. 1, 2, 3, 4, 5 or 6
 41. (i) 4.04 (ii) 2.56 (iii) 6.100
 (iv) 0.700 (v) 0.005 00
 42. (i) 140.1 (ii) 27.80

- (iii) 0.080 40 (iv) 6 010
 (v) 9.835
 43. 4.1 44. 0.077 0 45. 5 004
 46. 20 47. 18.1 48. 3.91
 49. 38 50. 18.14 51. 0.008 17
 52. 240.0 53. 0.054 54. 0.032 6
 55. (i) 14 830 (ii) 14 831.2
 (iii) 14 800 (iv) 14 831.15
 (v) 15 000
 56. (i) 0.04 (ii) 0.042 537 8
 (iii) 0.042 5 (iv) 0.042 538
 (v) 0.042 54
 57. (i) 30 (ii) 40 (iii) 20
 (iv) 80
 58. (i) 500 000 (ii) 0.2 (iii) 3
 (iv) 2 000 (v) 10 000
 59. 80 60. 200 61. 6
 62. 0.002 63. 7 64. 2 000
 65. 20 66. 20 67. 20
 68. 550 km
 69. 12
 70. \$75
 71. \$100
 72. 15 km/litre
 73. 12 m²
 74. (a) \$4 000 (b) \$47 900
 75. 1 200
 76. 9
 77. 20 mintues
 78. (a) 30 m (b) 50 m²
 79. (a) (i) 3 000 mm (ii) 30 m
 (b) (i) 300 m²
 (ii) 30 000 mm²
 80. 10 cm

Test 2A

1. (i) 15.33 (ii) 1.26 (iii) -26
 2. (i) $3\frac{7}{9}$ (ii) $1\frac{7}{10}$
 3. (a) 6.70 (b) 0.009 802
 (c) 0.42 (d) $\frac{9}{20}$
 4. (a) 2 000
 (b) (i) 7 000 (ii) 100
 5. (a) (i) 0.227 (ii) 0.23
 (b) 3.14, $\frac{22}{7}$, 3.14, 3.14

Test 2B

1. (a) (i) 0.135 (ii) 0.000 144
 (iii) 26
 (b) (i) \$1.15 (ii) \$26.28
 2. (a) 39 (b) (i) $1\frac{1}{5}$ (ii) $\frac{1}{14}$
 3. (a) 0.455 (b) $2\frac{5}{8}$

- (c) (i) 7 005 (ii) 7 004.58
 4. (a) B (b) C (c) 100
 5. (a) 0.0331 86 (b) 0.000 036
 (c) 0.000 008

Test 2C

1. (a) 6.34 (b) 6.00 (c) $\frac{5}{16}$
 (d) 0.53
 2. (a) $1\frac{1}{3}$ (b) (i) 60 (ii) 20
 3. (a) $\frac{3}{17} < \frac{1}{5} < 0.22 < \frac{2}{9}$
 (b) (i) 8 (ii) 10
 4. (a) B (b) C (c) 400
 5. (a) (i) 880 (ii) 140
 (b) (i) 196 875 (ii) 1.4

Term I Test A

1. (i) 276 (ii) 966
 2. (i) 907 (ii) 47.52 (iii) 500
 3. (a) (i) 0.325 (ii) 5.28
 (iii) 0.537 5 (iv) 1.562 5
 (b) (i) $\frac{49}{500}$ (ii) $\frac{17}{40}$
 (iii) $\frac{23}{80}$ (iv) $1\frac{1}{16}$
 4. (i) $3\frac{1}{10}$ (ii) 2 (iii) 2 (iv) $1\frac{2}{3}$
 5. (a) 8.45 (b) 0.070
 (c) 26 000 (d) 16 000
 6. (i) 20 000 000 (ii) 20
 (iii) 10 (iv) 20
 7. (a) (i) $2^6 \times 3^2$
 (ii) $2^3 \times 3^6$; 24, 18
 (b) (i) 28 (ii) 9
 (c) (i) 240 (ii) 1 260
 8. (i) 9 (ii) -109
 (iii) $-5\frac{1}{7}$ (iv) -134
 9. (i) 1 667.45 (ii) 0.76
 (iii) 0.03 (iv) 29.78
 10. (i) (a) 32, 64
 (b) 2 208, 4 416;
 $32 \times 69 = 2 208$,
 $64 \times 69 = 4 416$
 (ii) (a) $13 \times 69 = 69 + 276 + 552$
 $= 897$ ($13 = 1 + 4 + 8$)
 (b) $29 \times 69 = 69 + 276 + 552$
 $+ 1 104 = 2 001$
 ($29 = 1 + 4 + 8 + 16$)
 (c) 76×69
 $= 276 + 552 + 4 416$
 $= 5 244$ ($76 = 4 + 8 + 64$)