

The decimal point key was shown as a special symbol here for emphasis, but in future calculator sequences in this book we will save space by not showing the decimal point as a separate key.

Notice that in the preceding calculation, the numbers and operations were entered, and the calculator followed the standard order of operations.

When you work with decimal numbers, remember that for a calculator with a ten-digit display if an answer is a nonterminating decimal or a terminating decimal with more than ten digits, the calculator will display a number rounded to ten digits.* Knowledge of rounding is especially important in such cases because the result must often be rounded further.

YOUR TURN

Work the following problems for practice and round as indicated.

- $\$28.75 + \$161.49 - \$37.60$
- 2.8×0.85 (Round to the nearest tenth.)
- $2347.68 \div 12.9$ (Round to the nearest whole number.)
- $46.8 - 27.3 \times 0.49$ (Round to the nearest hundredth.)
- $\frac{16500 + 3700}{12 \times 68}$ (Round to the nearest tenth.)
- $(3247.9 + 868.7) \div 0.816$ (Round to the nearest ten.)
- $6 \div 0.07 \times 0.8 + 900$ (Round to the nearest hundred.)

ANSWERS

- $28.75 + 161.49 - 37.6 = 152.64$
Final zeros to the right of the decimal point may be omitted.
- $2.8 \times .85 = 2.38$ or 2.4 rounded
We need not enter the leading zero in 0.85
- $2347.68 \div 12.9 = 181.9906977$ or 182 rounded
- $46.8 - 27.3 \times .49 = 33.423$ or 33.42 rounded
- $16500 + 3700 = 12 \times 68$ or 24.75490196 rounded
- $3247.9 + 868.7 = .816$ or 5044.852941 rounded
- $6 \div .07 \times .8 + 900 = 968.5714286$ or 1000 rounded

*Some calculators will truncate an answer instead of rounding it. This means that they will show the first ten digits of the result. Be sure you know which type of calculator you have.

Problem Set 2, page 95

- A. 1. $\frac{9}{21}$ 2. $\frac{5}{16}$ 3. $\frac{3}{5}$ 4. $\frac{16}{35}$ 5. $\frac{32}{99}$ 6. $\frac{16}{33}$
7. $\frac{13}{8}$ 8. $\frac{8}{16}$ 9. $\frac{21}{55}$ 10. $\frac{9}{2}$ 11. $\frac{8}{1}$ 12. $\frac{1}{8}$
13. $\frac{1}{9}$ 14. $\frac{1}{16}$ 15. $\frac{8}{3}$ 16. $\frac{2}{3}$ 17. $\frac{1}{3}$ 18. $\frac{1}{4}$
19. $\frac{8}{3}$ 20. $\frac{4}{3}$ 21. $\frac{1}{6}$ 22. $\frac{1}{4}$ 23. $\frac{1}{5}$ 24. $\frac{3}{2}$
25. 9 26. 28 27. 44 28. 44 29. 68 30. 18
31. 15 32. 26 33. $\frac{16}{7}$ 34. $\frac{3}{2}$ 35. $\frac{8}{7}$ 36. $\frac{1}{4}$
37. $\frac{5}{3}$ 38. $\frac{10}{2}$ 39. $\frac{4}{7}$ 40. $\frac{1}{9}$
- B. 1. $\frac{3}{8}$ 2. $\frac{1}{2}$ 3. $\frac{12}{7}$ 4. $\frac{256}{5}$ 5. $\frac{1}{1}$ 6. $\frac{80}{49}$
7. $\frac{5}{64}$ 8. $\frac{5}{1}$ 9. $\frac{7}{2}$ 10. $\frac{3}{2}$ 11. 27 12. 34
13. $11\frac{3}{2}$ 14. $7\frac{1}{2}$ 15. 2 16. $\frac{5}{4}$ 17. 32 18. $10\frac{2}{3}$
19. $\frac{1}{6}$ 20. $\frac{4}{3}$ 21. $\frac{10}{7}$ 22. $\frac{6}{5}$ 23. $\frac{2}{4}$ 24. $\frac{1}{13}$
19. $\frac{1}{6}$ 20. $\frac{1}{3}$ 21. $\frac{4}{1}$ 22. $\frac{1}{13}$
- C. 1. $\frac{1}{4}$ 2. $\frac{1}{4}$ 3. $\frac{7}{32}$ 4. $\frac{1}{5}$ 5. $\frac{1}{13}$ 6. $\frac{29}{40}$
7. $\frac{8}{3}$ 8. $\frac{8}{3}$ 9. $\frac{16}{7}$ 10. $\frac{19}{30}$ 11. $\frac{23}{40}$ 12. $\frac{1}{13}$
13. $\frac{3}{8}$ 14. $\frac{2}{7}$ 15. $\frac{4}{1}$ 16. $\frac{1}{8}$ 17. $\frac{1}{19}$ 18. $\frac{1}{5}$
19. $\frac{1}{30}$ 20. $\frac{3}{19}$ 21. $\frac{1}{6}$ 22. $\frac{1}{3}$ 23. $\frac{5}{2}$ 24. $\frac{3}{1}$
- D. 1. $37\frac{1}{8}$ in. 2. 22 3. $22\frac{1}{5}$ in.; $22\frac{1}{7}$ in. 4. $1\frac{1}{3}$ in.
5. $\frac{25}{32}$ in. 6. Yes 7. $4\frac{5}{8}$ cu ft 8. $15\frac{15}{16}$ in.
9. $92\frac{16}{13}$ in. 10. 13 ft 11. $\frac{16}{15}$ in.
12. A: $2\frac{11}{16}$ in. B: $2\frac{3}{5}$ in. C: $6\frac{9}{16}$ in. D: $8\frac{7}{16}$ in.
13. $4\frac{3}{8}$ in. 14. $21\frac{3}{8}$ in. 15. $24\frac{4}{1}$ in. 16. $859\frac{3}{8}$ in. or 71 ft $7\frac{3}{8}$ in.
17. $1\frac{1}{16}$ in. and $\frac{1}{16}$ in. 18. $\frac{5}{8}$ in. and $\frac{10}{16}$ in. 19. $5\frac{3}{16}$ in.
20. $24\frac{5}{8}$ in.; $24\frac{1}{8}$ in. 21. $6\frac{3}{2}$ min. 22. $\frac{32}{15}$ in.

Chapter 3 Exercises 3-1, page 109

- A. 1. Seventy-two hundredths
2. Eight and seven tenths
3. Twelve and thirty-six hundredths
4. Five hundredths
5. Three and seventy-two thousandths
6. Fourteen and ninety-one thousandths
7. Three and twenty-four thousandths
8. Six and eighty-three thousandths
9. 0.004
10. 3.4
11. 6.7
12. 0.005
13. 12.8
14. 3.021
15. 10.032
16. 40.7
17. 0.0116
18. 0.0047
19. 2.0374
20. 10.0222
- B. 1. 21.01
2. 78.17
3. \$15.02
4. \$151.11
5. 1.617
6. 5.916
7. 828.6
8. 238.16
9. 63.7305
10. 462.04
11. 6.97
12. 1.04
13. \$15.36
14. \$6.52
15. 42.33
16. 36.18
17. \$22.02
18. \$24.39
19. 113.96
20. 13.22
21. 45.195
22. 245.11
23. \$27.51
24. 151.402
25. 95.888
26. 39.707
27. 15.16
28. 86.07
29. 8.618
30. 18.6373
31. 31.23
32. 292.19

33. 17.608 34. 29.395 35. 0.0776 36. 0.04262
 37. 24.22 38. 0.612 39. 1.748 40. 1.833
- C. 1. 0.473 in. 2. 11.85 lb
 3. (a) 0.013 in. (b) smaller; 0.021 in. (c) #14
 4. \$2673.90 5. A: 2.20 in. B: 0.45 in. C: 4.22 in.
 6. 32.2 in. 7. 2.267 in. 8. \$1667.05 9. No
 10. 68 ft 11. 3.4 hr 12. 0.013 cm 13. 3.37 in.
 14. 19.3 cm 15. 0.843 in. 16. 70.15 in.
- D. 1. \$308.24 2. \$24,869.19
 3. (a) 0.7399 (b) 4240.775 (c) 510.436 (d) 7.4262

Exercises 3-2, page 125

- A. 1. 0.00001 2. 21.5 3. 4 4. 0.09
 5. 0.84 6. 0.00006 7. 0.00003 8. 2.18225
 9. 0.07 10. 0.03 11. 2.16 12. 3.6225
 13. 6.03 14. 120 15. 20 16. 130
 17. 0.045 18. 126 19. 60 20. 10,000
 21. 400 22. 0.037 23. 6.6 24. 3256.25
 25. 605 26. 13.915 27. 0.00378 28. 0.29
 29. 0.048 30. 3200 31. 45,000 32. 0.000365
 33. 0.00008 34. 0.001128 35. 0.000364 36. 0.000048
 37. 0.000096 38. 55.53 39. 1.705
- B. 1. 42.88 2. 0.6 3. 6.5 4. 117.625
 5. 79.14 6. 1463 7. 3.6494 8. 19.48
 9. 0.216 10. 56.83
- C. 1. 3.33 2. 0.83 3. 10.53 4. 37.04
 5. 0.12 6. 2.62 7. 33.86 8. 4.96
 9. 33.3 10. 0.2 11. 0.3 12. 11.1
 13. 0.2 14. 0.336 15. 0.143 16. 0.224
 17. 65 18. 13.268 19. 2.999 20. 1109.001
- D. 1. \$105 2. \$15.60 3. 18.8 lb, or 19 lb rounded 4. 7.8 hr
 5.

W		C
A	16.91 lb	\$16.57
B	23.18	20.63
C	8.64	9.07
D	3.04	6.54

$$T = \$52.81$$

6. 40.035 lb 7. 48 lb 8. 8.36 lb
 9. 153.37 ft 10. 6255 lb 11. 0.075 volts
 12. \$1666.48 13. 335 14. 1600 15. 27 gal
 16. \$67.99 17. \$576 18. \$869 19. 2625 cycles
- E. 1. 8.00000007
 2. (a) 0.01234567 (b) 0.00112233 (c) 0.000111222
 3. 4.2435 in. 4. 0.0659 mm 5. \$580
 6. (a) 0.031 lb (b) 12¢ 7. 26.2 psi 8. \$0.022 or 2.2¢
 9. 23.343 mi 10. 19.908 psi

Exercises 3-3, page 134

- A. 1. 0.25 2. 0.67 3. 0.75 4. 0.4 5. 0.8
 6. 0.83 7. 0.29 8. 0.57 9. 0.86 10. 0.38

16.	4.71	17.	4.28	18.	0.34	19.	1.92	20.	6.77
11.	239.01	12.	253.01	13.	83.88	14.	3.985	15.	33.672
6.	\$3.95	7.	88.26	8.	12.55	9.	277.104	10.	5.311
1.	23.19	2.	174.96	3.	\$19.29	4.	26.06	5.	1.94
13.	63.063	14.	110.021	15.	5.0063	16.	11.0218		
9.	0.07	10.	0.018	11.	200.8	12.	16.17		
8.	Fifteen and thirty-seven thousandths								
7.	Ten and six hundredths								
6.	Three and forty-five hundredths								
5.	Nine and three tenths								
4.	Sixty-three and two hundred nineteen thousandths								
3.	Twenty-three and one hundred sixty-four thousandths								
2.	Eighty-four hundredths								
1.	Ninety-one hundredths								

Problem Set 3, page 137

3. \$699.48
 2. \$26,067.97; \$20,540.38; \$7999.92; \$8246.40; Total: \$62,854.67

13	0.094		
12	0.109		
11	0.125		
10	0.141		
9	0.156		
8	0.172		
7	0.188		
6	0.203		
5	0.219		
4	0.234		
3	0.25		
2	0.266		
1	0.281		
0	0.313		
2-0	0.344		
3-0	0.375		
4-0	0.406		
5-0	0.438		
6-0	0.469		
7-0	0.5		
1.	Gauge No.	Thickness (in.)	Gauge No.
			Thickness (in.)

10. $19\frac{8}{9}$ in.
 8. 3.4775 in.
 6. 523 full lots
 (d) \$295.83; Total: \$1063.45
 5. (a) \$64.94 (b) \$385.94 (c) \$316.74
 3. 2.3 squares
 4. 2 in.
 (c) \$31,450.20
 2. (a) 420 sq ft (b) 3712.5 sq ft of 4 in. and 4851 sq ft of 6 in.
 1. 1.375 g; 5.2 tablets

9.	3.64	10.	10.908	11.	7.65	12.	1.07
5.	7.88	6.	2.33	7.	1.43	8.	2.98
1.	4.385	2.	1.77	3.	1.5	4.	0.7681
26.	0.213	27.	0.019	28.	0.34		
21.	0.22	22.	0.65	23.	0.46	24.	0.61
16.	0.19	17.	0.38	18.	0.56	19.	0.81
11.	0.75	12.	0.1	13.	0.3	14.	0.17
						15.	0.42
						20.	0.15
						25.	0.03

- C. 1. 0.00008 2. 0.003 3. 0.84 4. 37.68 5. 0.108
 6. 2.12 7. 19.866 8. 1.24 9. 61.7 10. 0.26
 11. 3.8556 12. 28.585 13. 0.006 14. 5.26 15. 18
 16. 0.2 17. 4.34 18. 4.36 19. 0.23 20. 1.50
 21. 2.78 22. 0.22 23. 0.04 24. 16.84 25. 0.526
 26. 0.503 27. 214.634 28. 0.028 29. 27.007 30. 1.182
 31. 1.5 32. 23.5 33. 4.6 34. 0.9 35. 47.2
 36. 123.8
- D. 1. 0.0625 2. 0.875 3. 0.15625 4. 0.4375
 5. 1.375 6. 1.75 7. 2.55 8. 1.16
 9. 2.6 10. 1.03125 11. 2.3125
 12. 19.28 13. 30.67 14. 1.92 15. 78.57
 16. 0.96 17. 0.13
- E. 1. 291 2. 2.75 in. 3. 9.772 in. 4. \$588.80
 5. 0.0021 in. 6. 1.132 ohms 7. 489.4 lb 8. 0.02374 in.
 9. (a) 0.1875 in. (b) 0.15625 in. (c) 0.375 in.
 (d) 0.203125 in.
 10. (a) $\frac{3}{16}$ in. (b) $\frac{2}{16}$ in. (c) $\frac{5}{16}$ in. (d) $\frac{13}{16}$ in.
 11. (a) 0.0089 in. (b) 0.0027 in. (c) 0.55215 in. (d) 0.306175 in.
 12. \$3808.74 13. 17.5 ft 14. 0.0423 in.
 15. Max: 2.525 in. Min: 2.475 in. 16. \$823.13 17. \$229.90
 18. \$42.50 19. 56.7 cu ft 20. 27 in. 21. 18
 22. \$27.97/hr 23. 11.4 hr 24. 1.4045 in. 25. 52 lines
 26. 359 gal 27. \$22.12 28. \$200.27
 29. Last year was greater by \$0.83 30. 0.358 in.

Chapter 4 Exercises 4-1, page 157

- A. (In each case only the missing answer is given.)
 1. (a) 7:1 (b) 12:7 (c) 6 (d) 6
 (e) 45 (f) 9 (g) 16 (h) 50
 (i) 3:2 (j) 2:5
 2. (a) 8:3 (b) 5:4 (c) 16 in. (d) 6 cm
 (e) 40 cm (f) $2\frac{1}{2}:1$ or 5:2 (g) 0.75 or 3:4 (h) 6.5 cm
 (i) 5.4 cm (j) 17.8 cm
 3. (a) 16:12 (b) 8 ft (c) 28 ft (d) 6.88:12
 (e) 7.2:12 (f) 4 ft (g) 20 ft (h) 5 ft 1 in.
- B. 1. $x = 12$ 2. $R = 86.4$ 3. $y = 100$ 4. $H = 60$
 5. $P = \frac{7}{6}$ 6. $x = 102$ 7. $A = 3.25$ 8. $M = 7.2$
 9. $T = 1.8$ 10. $N = 0.42$ 11. $x = 3$ 12. $A = 1.3$
 13. $x = 5.04$ 14. $R = 6\frac{1}{2}$ 15. $L = 5$ ft 16. $x = 58.9$ cm
 17. $x = 4$ cm 18. $W = \frac{1}{8}$ in. or 0.125 in.
- C. 1. 5 cu in. 2. 15 gal 3. 21 pins
 4. 25.5 lb 5. 5.25 cu yd 6. 300 lb
 7. 288.75 gal 8. 224 ounces 9. 124.8 lb
 10. 12 ounces 11. \$736 12. 72 parts
 13. 375 ft 14. $20\frac{5}{8}$ lb or 20.625 lb 15. \$102
 16. $2\frac{3}{4}$ pints 17. 168 18. 20.4 in.

Exercises 4-2, page 167

- A. 1. 32% 2. 100% 3. 50% 4. 210%
 5. 25% 6. 375% 7. 4000% 8. 67.5%
 9. 200% 10. 7.5% 11. 50% 12. $16\frac{2}{3}\%$
 13. 33.5% 14. 0.1% 15. 0.5% 16. 30%