Student Text *UNIT 1 Decimals and Fractions* Answers

1.1 Decimals

1. (a) 0.7 (b) 0.8 (c) 0.3 (d) 0.05 (e) 0.21 (f) 0.42 (g) 0.005 (h) 0.151
   (i) 0.022 (j) 0.08 (k) 0.13 (l) 0.016 (m) 0.5 (n) 0.04 (o) 0.321

2. (a) $\frac{4}{10}$ (b) $\frac{3}{10}$ (c) $\frac{4}{100}$ (d) $\frac{32}{100}$ (e) $\frac{45}{100}$
   (f) $\frac{6}{100}$ (g) $\frac{8}{100}$ (h) $\frac{14}{100}$ (i) $\frac{8}{1000}$ (j) $\frac{147}{1000}$
   (k) $\frac{36}{1000}$ (l) $\frac{4}{100}$ (m) $\frac{1}{10}$ (n) $\frac{9}{1000}$ (o) $\frac{107}{1000}$

3. (a) 5.6 (b) 3.3 (c) 7.8 (d) 6.42 (e) 7.17 (f) 3.73
   (g) 4.6 (h) 4.8 (i) 3.16 (j) 3.94 (k) 10.2 (l) 1.4

5. (a) 1.51 (b) 0.424 (c) 0.282 (d) 0.839 (e) 1.102 (f) 0.281
   (g) 0.858 (h) 0.738 (i) 0.372 (j) 11.87 (k) 12.291 (l) 17.48
   (m) 8.73 (n) 130.65 (o) 50.006

6. (a) hundredths (b) tenths (c) hundredths (d) tenths
   (e) thousandths (f) thousandths

7. (a) \$5.16, \$3.08, \$4.56, \$5.50 (b) \$9.15 (c) \$2.11

8. (a) \$3.28 (b) \$1.52 (c) \$8.42 (d) \$11.21 (e) \$0.48
   (f) \$1.27 (g) \$0.64 (h) \$320.11 (i) \$84.21

9. (a) \$1.78 (b) \$3.22

10. (a) \$2.40 (b) \$3.50

11. 1.87 m

12. 76 cm

13. 0.8 kg

14. (a) 5 (b) 5 cents

15. (a) 10.85 kg (b) 26.55 kg (c) 105 dollars

1.2 Multiplying and Dividing with Decimals

1. (a) 47.4 (b) 632 (c) 4.16 (d) 1274 (e) 0.1658
   (f) 3.24 (g) 630 (h) 4700 (i) 32000 (j) 47000
   (k) 0.0068 (l) 0.82 (m) 0.192 (n) 0.014 (o) 180

2. (a) 36 (b) 1410 (c) 10500 (d) 132000 (e) 6000
   (f) 10400 (g) 3.3 (h) 0.37 (i) 0.007 (j) 0.007
   (k) 0.171 (l) 0.13 (m) 10860 (n) 23600 (o) 0.099
   (p) 0.06 (q) 0.6 (r) 0.0035

3. (a) 40 (b) 2500 (c) 80 (d) 600 (e) 13 200
   (f) 3100 (g) 5200 (h) 4000 (i) 700

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4. (a) (i) 360 c (ii) 60 000 c (iii) 4800 c (b) (i) \$3.60 (ii) \$600 (iii) \$48
   (c) 300 000
5. \$124.87 , \$413 , \$107 , \$122.40
6. (a) 0.012 miles
   (b) (i) 5000 hours (ii) 90 hours
7. (a) (i) J\$21 080 (ii) J\$89 590 (iii) J\$158 100
   (b) (i) J\$2000 (ii) J\$8800 (iii) J\$12 000
8. (a) 1500 (b) 500
9. 21 120 litres
10. (a) (i) \$350 000 (ii) \$560 000 (iii) \$770 000 (b) 2000
11. (a) 540 (b) 50
12. (a) 125.315 (b) 130
13. (a) 22.1 (b) 0.297
14. (a) 4.93 (b) 4.9 (c) 5

1.3 Fractions and Decimals

1. (a) (i) 18.64 (ii) 19 (b) (i) 1024.84 (ii) 1000 (c) (i) 16.04 (ii) 16
   (d) (i) 181.44 (ii) 180 (e) (i) 16.82 (ii) 17 (f) (i) 0.08 (ii) 0.084
   (g) (i) 0.01 (ii) 0.0096 (h) (i) 4.84 (ii) 4.8 (i) (i) 3.86 (ii) 3.9
2. (a) 48 600 (b) 48 637.01 (c) 48 637.0125 (d) 48 640 (e) 48 637.012 (f) 49 000
3. (a) 0.0047 (b) 48.2 (c) 20 (d) 4.86 (e) 18.42
   (f) 21.80 (g) 15 000 (h) 0.005 (i) 0.00418
   (j) 15 700 (k) 55 000 (l) 31.4 (m) 14.18 (n) 0.82
   (o) 1.841 (p) 15.0 (q) 14.170 (r) 201
4. (a) 40 000 , 45 000 , 44 900 , 44 850 (b) (i) 45 000 (ii) 40 000
5. (a) 0.5 (b) 0.75 (c) 0.4 (d) 0.6 (e) 0.125 (f) 0.625
   (g) 0.375 (h) 0.875 (i) 0.2
6. (a) 0.3333 (b) 0.1667 (c) 0.5714 (d) 0.1429 (e) 0.7143 (f) 0.8333
7. (a) 0.11111 , 0.22222 , 0.44444 , 0.55556
   (b) The recurring digit in the decimal is the numerator.
   (c) 0.7777... , 0.8888...
8. (a) 0.09091 , 0.18182 , 0.27273 , 0.36364
   (b) 0.45455 , 0.54545 , 0.63636 , 0.72727 , 0.81818 , 0.90909
10. (a) 0.8 (b) 0.096 , $\frac{4}{5}$, 0.805 , 0.85

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1.4 Negative Numbers

1. $-4°C;\ -2°C;\ -8°C;\ -14°C;\ -8°C;\ -5°C;\ -7°C$

2. (a) –10, –6, –5, –4, 2, 3 (b) –4, –1, 0, 3, 7
   (c) –6, –4, –2, 0, 3, 7 (d) –7, –4, –2, 0, 5, 7
   (e) –5, –4, –3, –1, 0, 6

3. (a) –7, –8, –9 (b) –3, –2, –1, 0, 1 (c) –2, –1 (d) –2
   (e) –8, –7, –6, –5, -4, –3, –2, –1

4. (a) –7, –8 or –9 (b) –7, –8, . . . (c) –1, –2, –3, or –4
   (d) –9, –8, . . . (e) –7 or –8 (f) –5, –6, . . .

5. (a) $3 > 2$ (b) $-5 > -6$ (c) $0 > -1$ (d) $-7 > -10$ (e) $-2 > -4$
   (f) $-1 > -6$ (g) $-5 < 0$ (h) $-9 < -6$ (i) $-8 < -2$

1.5 Operations with Negative Numbers

1. (a) 12 (b) –14 (c) –12 (d) -20 (e) –7 (f) –6
   (g) –1 (h) 28 (i) 1 (j) 32 (k) -2 (l) 7
   (m) –10 (n) 2 (o) –13 (p) –12 (q) 56 (r) 1
   (s) –6 (t) –15 (u) –8 (v) –8 (w) 5 (x) –2

1.6 Estimating Answers

1. (a) 50 (b) 20 (c) 30 (d) 10 (e) 20 (f) 100
   (g) 60 (h) 0.2 (i) 0.04 (j) 2 (k) 20 (l) 2

2. Approximate answers are
   (a) 56 (b) 48 (c) 960 (d) 51 (e) 600 (f) 540
   (g) 10 (h) 7 (i) 20 (j) 120 (k) 5 (l) 45
   Actual answers are
   (a) 56.01 (b) 54.20 (c) 1020 (d) 53.51 (e) 623.4 (f) 545.5
   (g) 11.11 (h) 7.634 (i) 18.59 (j) 113.8 (k) 4.446 (l) 46.10

3. Approximate answers are
   (a) 2 (b) 0.4 (c) 3 (d) 7 (e) 40
   (f) 20 (g) 15 or 16§ (h) 85 (i) 200

4. (a) 200 m (b) 233.28 m (c) 263.49 m

5. (a) Estimate 1200 m , Actual 1286 m (b) Estimate 250 s , Actual 229 s

6. (a) About 40 ms^{-1} (b) 40.04 , 39.67 , 39.02

7. (a) 10 to 12 km , 11.08 km (b) (i) 440 km (ii) 330 km or 374 km

8. (a) Estimate \$70 , Actual \$63.06 (b) Estimate \$30 , Actual \$24.86
   (c) Estimate \$40 , Actual \$38.19

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9. (a) Estimate 72 , Actual 91.25 (b) Estimate 48 , Actual 48.5
   (c) Estimate 80 , Actual 86.02

10. (a) 60×30 (b) 1800 (c) 88

11. No ; it should be J$1413.04

1.7 Using Brackets and Memory on a Calculator

1. (a) 97.2 (b) 27.40 (c) 3.55 (d) 2.69 (e) 0.767
   (f) 1.54 (g) 0.348 (h) 1.28 (i) 1.65 (j) 0.372
   (k) 0.0587 (l) 0.726

3. (a) 17.3 (b) 25.75 (c) 124

4. (a) 5.5 , 3.6591 , 3.1960 , 3.1625 , 3.1623 , 3.1623
   (b) 3.5 , 3.1786 , 3.1623 , 3.1623 , 3.1623 , 3.1623
   (c) Both sequences are converging to 3.1623, which is $\sqrt{10}$, but using 2 converges more quickly.

5. (a) (i) 141 , 141 (ii) 468 , 57 (iii) 3.2 , 28.8 , 3.2
   (b) (i) $3 \times 6 + 5 \times 51 + 15 \times 2 =$ (ii) $(3+6) \times 5 \times 2 =$
   (iii) & (iv) need all the brackets (v) $3 \times 4 \div (5+2) =$ (vi) $3 \times 2 \div (4 \times 6) =$

6. (a) 603.2 cm^2 (b) 258.1 cm^2

7. (a) (i) 2120575 mm^3 (ii) 5089 cm^3 (b) (i) 53.6 cm (ii) 88.4 cm

8. 11.1

9. 7.00

10. (a) 4.29 (b) 4.652 (c) 50 (d) 2.5

11. (a) 36.6025 (b) 7.35

12. (a) (i) $v = 120$, $u = 20$, $t = 5$ (ii) $a = 20$ (b) = needed after 6

13. Last × should be replaced by ÷ , or insert brackets around 3.2×0.47