Class – 6

Decimals

Exercise 7.1

Decimals (Solved for Slow Learners)

1. Convert the following fractions to decimals

Method reminder (short):
- If denominator is 100, 1000 etc., move decimal point to make denominator 1 (i.e. 43/100 → 0.43)
- For mixed numbers, write whole part, then add decimal for fractional part (e.g. 5 7/10 → 5.7)

(i) 43/100 Move decimal two places left because denominator = 100.
43/100 = **0.43**

(ii) 7/100 Move decimal two places left.
7/100 = **0.07**

(iii) 85/1000 Denominator 1000 → move decimal three places left.
85/1000 = **0.085**

(iv) 347/1000 Move decimal three places left.
347/1000 = **0.347**

(v) 5/1000 Move decimal three places left.
5/1000 = **0.005**

(vi) 1143/1000 Move decimal three places left.
1143/1000 = **1.143**

(vii) 5 7/10 Mixed number: whole part 5, fractional 7/10 = **0.7 → combine: 5.7**

(viii) 3 49/1000 Mixed number: whole part 3, fractional 49/1000 = **0.049 → combine: 3.049**

2. Write as fractions or mixed-numbers

(i) 0.05 0.05 = 5/100 = simplify → **1/20**

(ii) 0.34 0.34 = 34/100 = simplify → **17/50**

(iii) 3.4 3.4 = 3 + 4/10 = 3 4/10 = simplify fractional part → **3 2/5**

(iv) 0.035 0.035 = 35/1000 = simplify → **divide by 5 → 7/200**

(v) 4.005 4.005 = 4 + 5/1000 = 4 5/1000 = simplify → **4 1/200**

(vi) 1.183 1.183 = 1 + 183/1000 = 1 183/1000 (183 and 1000 have GCD 1) → **remains 1 183/1000**

3. Write number names (in two ways)

(i) 3.15

1) Three and fifteen hundredths
2) Three point one five

(ii) 103.7

1) One hundred three and seven tenths
2) One hundred three point seven

(iii) 27.052

1) Twenty-seven and fifty-two thousandths
   (Note: 0.052 = 52/1000)
2) Twenty-seven point zero five two

(iv) 13.108

1) Thirteen and one hundred eight thousandths
   (0.108 = 108/1000)
2) Thirteen point one zero eight

(v) 1.843

1) One and eight hundred forty-three thousandths
2) One point eight four three

(vi) 20.085

1) Twenty and eighty-five thousandths
   (0.085 = 85/1000 = 17/200)
2) Twenty point zero eight five

4. Write decimals from words

(i) Twenty-five and twenty-five hundredths

Answer: 25.25

Explanation: 'hundredths' → two decimal places; 25 and 25/100 = 25.25

(ii) One hundred four point three zero five
Answer: 104.305
Explanation: 'point three zero five' → digits after decimal are 305

(iii) One and two thousandths
Answer: 1.002
Explanation: 'thousandths' → three decimal places; 2/1000 = 0.002

(iv) Four and seven hundred forty-nine thousandths
Answer: 4.749
Explanation: 749/1000 = 0.749

(v) One and one thousandth
Answer: 1.001
Explanation: 1/1000 = 0.001

Practice (fill-in-the-blanks)

A. Convert to decimals: 67/100 = _____ , 9/1000 = _____

B. Write as fraction: 0.6 = _____ , 2.034 = _____

C. Write number name: 7.21 → _____

D. Words to decimal: 'Nine and fifty-six hundredths' → _____

Tip for teachers/parents: Read each line aloud, let the student move a finger for each decimal place, and encourage them to say 'hundredths' = 2 places, 'thousandths' = 3 places.

Exercise 7.2

Decimals (Solved for Slow Learners)

Step-by-step, colourful, easy-to-follow solutions. Each question shows the method and the final answer clearly.

1. Write the place value of:

(i) 4 in 31.417 4 is in the tenths place → **value = 0.4**

(ii) 7 in 105.107 7 is in the thousandths place → **value = 0.007**

(iii) 1 in 2.315 1 is in the hundredths place → **value = 0.01**

(iv) 8 in 105.008 8 is in the thousandths place → **value = 0.008**

2. Write in expanded form:

(i) 5.3 5 + 3/10 = 5 + 0.3

(ii) 10.347 10 + 3/10 + 4/100 + 7/1000 = 10 + 0.3 + 0.04 + 0.007

(iii) 34.003 30 + 4 + 0/10 + 0/100 + 3/1000 = 34 + 0.003

3. Write in standard numeral:

(i) 5 + 1/10 + 2/1000 = 5.102

(ii) 300 + 10 + 4 + 8/1000 = 314.008

(iii) 5 + 2/10 + 1/100 + 7/1000 = 5.217

(iv) 30 + 4 + 7/10 + 1/1000 = 34.701

4. Which is greater?

(i) 7/10 or 0.07
7/10 = 0.7, which is greater than 0.07 → 7/10 is greater.

(ii) 43/100 or 0.043
43/100 = 0.43 → greater than 0.043.

(iii) 501/1000 or 5.1
501/1000 = 0.501 → smaller than 5.1 → 5.1 is greater.

5. State True or False:

(i) 0.43 = 0.430 True (adding zeroes doesn't change the value)

(ii) 4.051 = 4.501 False (digits after decimal are different)

(iii) 0.5 = 0.500 True

(iv) 10.001 = 10.01 False (values are different)

6. Write the whole-number part:

(i) 4.01 Whole number = 4

(ii) 104.14 **Whole number = 104**

(iii) 0.905 **Whole number = 0**

7. Write the decimal part:

(i) 81.15 **Decimal part = 15**

(ii) 4.005 **Decimal part = 005**

(iii) 18.401 **Decimal part = 401**

Exercise 7.3 and 7.4 — Decimals
(Solved for Slow Learners)

Step-by-step, colourful, and easy-to-follow explanations for Exercises 7.3 and 7.4. Each problem is solved with clear logic and colour highlights for answers.

Exercise 7.3

Conversion and Comparison of Decimals

1. Write the decimal-places in each of the following decimals:

(i) 4.03 **2 decimal places**

(ii) 0.005 **3 decimal places**

(iii) 124.03 **2 decimal places**

(iv) 105.8 **1 decimal place**

2. Convert into like decimals:

4.04, 3.1, 5.123, 0.01 → largest decimal places = 3 → write all with 3 decimal places:
4.040, 3.100, 5.123, 0.010

3. Which of the following statements are true?

(i) 0.12 and 0.07 are like decimals. **True (both have 2 decimal places)**

(ii) 4.01 and 4.014 are like decimals. **False (one has 2, the other 3 decimal places)**

(iii) 7.17 and 0.717 are unlike decimals. **True (different number of digits before decimal point doesn't matter; decimals are unlike if decimal places differ)**

4. Which is greater?

(i) 0.7 or 0.3 0.7 > 0.3

(ii) 0.7 or 0.09 0.7 > 0.09

(iii) 18.47 or 18.047 18.47 > 18.047

(iv) 18.875 or 18.986 18.986 > 18.875

5. Which is smaller?

(i) 12.12 or 1.212 1.212 is smaller

(ii) 2.001 or 1.020 1.020 is smaller

6. Arrange the decimals in increasing order:

(i) 3.81, 38.1, 4.917, 0.999 0.999, 3.81, 4.917, 38.1

(ii) 98.001, 98.01, 98.1 98.001, 98.01, 98.1

(iii) 27.001, 18.91, 20.003 18.91, 20.003, 27.001

Exercise 7.4

Addition and Subtraction of Decimals

(Solved for Slow Learners)

1. Find the sum:

(i) 4.001 + 18.9 + 105.03 = 127.931

(ii) 13.9 + 109.003 + 0.87 = 123.773

(iii) 15.6 + 17.05 + 540.314 + 2.005 = 574.969

(iv) 241.86 + 4.0 + 3.01 + 0.145 = 249.015

(v) 10.14 + 18 + 0.009 + 40.34 = 68.489

2. Subtract:

(i) 84.63 from 105.1 → 105.1 - 84.63 = 20.47

(ii) 1.005 from 3.81 → 3.81 - 1.005 = 2.805

(iii) 0.059 from 0.3 → 0.3 - 0.059 = 0.241

(iv) 8.134 from 10 → 10 - 8.134 = 1.866

(v) 24.654 from 84.3 → 84.3 - 24.654 = 59.646

(vi) 104.3 from 242.111 → 242.111 - 104.3 = 137.811

3–7 Word Problems

3. What is to be added to 3.95 to get 10?
Answer: 10 - 3.95 = 6.05

4. What is to be subtracted from 8.314 to get 0.943?
Answer: 8.314 - 0.943 = 7.371

5. Kamal covers 10.75 km; 8.8 km by bus, rest by foot → distance on foot?
Answer: 10.75 - 8.8 = 1.95 km

6. Lengths of rods: 8.4 cm, 12.85 cm, 25.05 cm → total length?
Answer: 8.4 + 12.85 + 25.05 = 46.3 cm

7. Wheat purchase (3 days): 50.250 + 25.750 + 72.300 =
Answer: 148.300 kg total

Chapter 7.5 & 7.6 – Multiplication, Division, and Word Problems on Decimals

Step-by-step colourful explanations for each question — designed specially for slow learners.
Every solution shows clear working, reasoning, and final highlighted answers.

Exercise 7.5

Multiplication of Decimals

(Solved for Slow Learners)

☞*Method Reminder:*
1. Multiply as whole numbers.
2. Count total decimal places in both numbers.
3. Place the decimal point in the product accordingly.

1. 12.13 × 15
Step 1: Ignore decimals → 1213 × 15 = 18195
Step 2: Count 2 decimal places (from 12.13)
Step 3: Place decimal two digits from right → 181.95
✅**Answer = 181.95**

2. 5.14 × 23
Step 1: 514 × 23 = 11822
Step 2: 2 decimal places → 118.22

✓Answer = 118.22

3. 67.121 × 85
Step 1: 67121 × 85 = 5705285
Step 2: 3 decimal places → 5705.285
✓Answer = 5705.285

4. 31.143 × 93
Step 1: 31143 × 93 = 2896179
Step 2: 3 decimal places → 2896.179
✓Answer = 2896.179

5. 12.12 × 3.7
Step 1: 1212 × 37 = 44844
Step 2: Total decimal places = 3
Step 3: Result = 44.844
✓Answer = 44.844

6. 10.14 × 23.5
Step 1: 1014 × 235 = 238290
Step 2: Total decimals = 3 → 238.290
✓Answer = 238.29

7. 81.1 × 1.03
Step 1: 811 × 103 = 83433
Step 2: Total decimals = 3 → 83.433
✓Answer = 83.433

8. 31.23 × 84.2
Step 1: 3123 × 842 = 2639466
Step 2: 3 decimals → 2639.466
✓Answer = 2639.466

9. 4.31 × 10
Multiply by 10 → move decimal 1 right → ✓43.1

10. 47.05 × 100
Multiply by 100 → move decimal 2 right → ✓4705

11. 83.123 × 1000
Multiply by 1000 → move decimal 3 right → ✓83123

12. 671.05 × 1000
Move decimal 3 right → ✓671050

13. 8.41 × 500
8.41 × 5 = 42.05 → then ×100 = 4205
✓Answer = 4205

14. 74.34 × 900
74.34 × 9 = 669.06 → then ×100 = 66906
✓Answer = 66906

15. 0.03 × 1.2
3 × 12 = 36 → total decimals = 3 → ✓0.036

16. 0.36 × 4.8
36 × 48 = 1728 → 4 decimal places → ✓1.728

Exercise 7.5

Division of Decimals

Steps:
1. Convert divisor to whole number by moving decimal right.
2. Move decimal in dividend by same number of places.
3. Divide normally.
4. Put decimal in quotient correctly.

1. 125.375 ÷ 25
→ Move no decimal.
125.375 ÷ 25 = 5.015
✓Answer = 5.015

2. 0.192 ÷ 12
→ 0.192 ÷ 12 = 0.016

✅**Answer = 0.016**

3. 3.024 ÷ 36
→ 3.024 ÷ 36 = 0.084
✅**Answer = 0.084**

4. 1.125 ÷ 15
→ 1.125 ÷ 15 = 0.075
✅**Answer = 0.075**

5. 8.48 ÷ 400
→ Multiply both by 100 → 848 ÷ 40000 = 0.0212
✅**Answer = 0.0212**

6. 320.46 ÷ 200
→ Multiply both by 100 → 32046 ÷ 20000 = 1.6023
✅**Answer = 1.6023**

7. 3.2375 ÷ 0.35
→ Make divisor 35 → 323.75 ÷ 35 = 9.25
✅**Answer = 9.25**

8. 1.2213 ÷ 0.023
→ Make divisor 23 → 122.13 ÷ 23 = 5.31
✅**Answer = 5.31**

9. 36 ÷ 0.45
→ 3600 ÷ 45 = 80
✅**Answer = 80**

Exercise 7.6

Word Problems on Decimals

1. A 6 m long copper wire costs ₹226.36. Find cost of 1 m.
Step 1: Divide 226.36 ÷ 6 = 37.7266
Step 2: Round to ₹37.73
✅**Answer = ₹37.73 per metre**

2. Weight of 7 bricks = 63.256 kg. Find weight of each and of 11 bricks.
Step 1: Each brick = 63.256 ÷ 7 = 9.0366 → 9.04 kg
Step 2: 11 bricks = 9.0366 × 11 = 99.40 kg
✅**Answer = Each 9.04 kg, 11 bricks 99.40 kg**

3. Iron rod 12.36 m costs ₹66.50. Find cost per metre.
Step 1: 66.50 ÷ 12.36 = 5.38
✅**Answer = ₹5.38 per metre**

4. Cost of 21 articles ₹226.46. Find cost of 1.
Step 1: 226.46 ÷ 21 = 10.78
✅**Answer = ₹10.78 each**

5. Cloth for 8 pants, each 2.16 m.
Step 1: 8 × 2.16 = 17.28
✅**Answer = 17.28 m cloth needed**

6. Boy walks 1.25 km per hour for 2⅓ hours.
Step 1: Convert 2⅓ = 7/3
Step 2: 1.25 × 7/3 = 2.916
✅**Answer = 2.92 km**

7. 865 notebooks at 85 paise each.
Step 1: 865 × 85 = 73525 paise
Step 2: ÷100 = ₹735.25
✅**Answer = ₹735.25**

8. Bed-cover 2.36 m each, find for 13 covers.
Step 1: 2.36 × 13 = 30.68
✅**Answer = 30.68 m**

9. Three strings: 50.75, 68.58, 121.03 m. Total and 12 equal pieces.
Step 1: Add = 50.75 + 68.58 + 121.03 = 240.36
Step 2: ÷12 = 20.03
✅**Answer = Each = 20.03 m**

10. Product of two decimals = 22.94, one = 12.4. Find other.
Step 1: 22.94 ÷ 12.4 = 1.85
✅**Answer = 1.85**

Teacher's Tip:
Encourage students to read each step aloud while pointing at the decimal place. Let them highlight decimal shifts using a colour pen. Repetition builds accuracy and confidence!

Chapter 7 – Decimals:
Miscellaneous, Assertion & Chapter Test
(Step-by-Step Solutions)
(Solved for Slow Learners)

Complete colourful, interactive solutions prepared for slow learners — including explanations, hints, and clear answers.

Miscellaneous Exercise

1. Write 4.07 in words.
Four and seven hundredths.

2. Convert 7/20 into decimal.
Step 1: Divide 7 ÷ 20 = 0.35
✅Answer = 0.35

3. Add 12.34 + 6.085
Step 1: Align decimals →
12.340
+ 6.085
————
18.425
✅Answer = 18.425

4. Subtract 7.605 from 18.3
Step 1: Align decimals →
18.300 - 7.605 = 10.695
✅Answer = 10.695

5. Multiply 4.35 × 2.4
Step 1: Ignore decimals → 435 × 24 = 10440
Step 2: Total decimals = 2 + 1 = 3 → 10.440
✅Answer = 10.44

6. Divide 7.84 ÷ 0.4
Step 1: Make divisor whole → 78.4 ÷ 4 = 19.6
✅**Answer = 19.6**

7. Convert 3.005 into fraction.
3.005 = 3005/1000 = 601/200
✅**Answer = 3 1/200**

8. Convert 0.042 into fraction.
0.042 = 42/1000 = 21/500
✅**Answer = 21/500**

9. Write number with digit 4 in tenths place and 7 in thousandths place.
Example → 3.407

10. Arrange 0.25, 0.205, 0.2505 in ascending order.
Compare → 0.205 < 0.25 < 0.2505
✅**Answer = 0.205, 0.25, 0.2505**

11. Which is greater: 4.307 or 4.37?
Compare → 4.307 < 4.37
✅**Answer = 4.37**

12. Add: 9.075 + 3.06 + 1.9
Align →
9.075
+3.060
+1.900
————
14.035
✅**Answer = 14.035**

13. Multiply: 2.35 × 0.2
235 × 2 = 470 → 3 decimal places → 0.470
✅**Answer = 0.47**

14. Divide: 0.48 ÷ 0.06
Make divisor whole → 48 ÷ 6 = 8
✅**Answer = 8**

15. Convert 1/8 to decimal.
1 ÷ 8 = 0.125
✅**Answer = 0.125**

16. Convert 7/25 to decimal.
7 ÷ 25 = 0.28
✅**Answer = 0.28**

17. Add 5.75 + 9.6 + 4.005
Align decimals → 5.750 + 9.600 + 4.005 = 19.355
✅**Answer = 19.355**

18. Subtract 7.05 from 10.2
10.20 - 7.05 = 3.15
✅**Answer = 3.15**

19. Find product: 0.12 × 0.3
12 × 3 = 36 → 3 decimal places → 0.036
✅**Answer = 0.036**

20. Find quotient: 6.3 ÷ 0.9
Make divisor 9 → 63 ÷ 9 = 7
✅**Answer = 7**

💡 Assertion and Reason

Assertion (A): 0.4 × 10 = 4
Reason (R): Multiplying by 10 shifts decimal one place right.
✅Both A and R are true, and R correctly explains A.

Assertion (A): 5.36 ÷ 100 = 5.36
Reason (R): Division by 100 does not change value.
❌A is false; dividing by 100 moves decimal two places left → 0.0536

Assertion (A): 7.0 and 7 represent the same number.
Reason (R): Zeros on the right of decimal do not change value.
✅Both A and R true; R explains A.

Assertion (A): 4.205 < 4.25
Reason (R): Compare digit by digit from left after decimal.
✅Both A and R are true, R correctly explains A.

👑 Chapter Test – Decimals

1. Convert 15% to decimal.
15% = 15/100 = 0.15
✅**Answer = 0.15**

2. Write 130% as decimal.
130% = 130/100 = 1.3
✅**Answer = 1.3**

3. Change 7/10 to percent.
7/10 × 100 = 70%
✅**Answer = 70%**

4. Convert 3/25 to percent.
3 ÷ 25 × 100 = 12%
✅**Answer = 12%**

5. Express 0.08 as percent.
0.08 × 100 = 8%
✅**Answer = 8%**

6. Convert 5:8 into percent.
5/8 × 100 = 62.5%
✅**Answer = 62.5%**

7. Express 3/4 as decimal.
3 ÷ 4 = 0.75
✅**Answer = 0.75**

8. Express 0.35 as fraction.
0.35 = 35/100 = 7/20
✅**Answer = 7/20**

9. Multiply 0.24 × 0.5
24 × 5 = 120 → 3 decimal places → 0.120
✅**Answer = 0.12**

10. Divide 1.2 ÷ 0.4
12 ÷ 4 = 3
✅**Answer = 3**

11. Add 4.37 + 0.125
4.370 + 0.125 = 4.495
✅**Answer = 4.495**

12. Subtract 3.005 from 5.1
5.100 - 3.005 = 2.095
✅**Answer = 2.095**

13. Convert 7.25 to fraction.
7.25 = 725/100 = 29/4
✅**Answer = 7 1/4**

14. Write place value of 2 in 31.452.
Digit 2 → thousandths place → value = 0.002
✅**Answer = 0.002**

15. Word problem: Each orange costs ₹3.25. Find cost of 12 oranges.
3.25 × 12 = 39.00
✅**Answer = ₹39.00**

Teacher's Tip: Encourage students to highlight decimals and underline key steps. Repeatedly revise decimal shifting rules (×10, ÷10, ×100, ÷100). Use oral practice for reading decimal numbers aloud.