

CLASS 7

MATHS

NCERT SOLUTIONS

NCERT Solutions for Class 7 Maths Chapter 12: Another Peek Beyond the Point – Ganita Prakash Part 2

Complete NCERT Solutions for Class 7 Maths Chapter 12 "Another Peek Beyond the Point" from the Ganita Prakash Part 2 textbook, covering decimal multiplication, decimal division, division with a decimal divisor, and real-life applications with step-by-step working.

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Multiplying Decimal Numbers (Figure It Out – Page 73)

Rule: multiply the numbers as if they were whole numbers, then count the total number of digits after the decimal point in both factors together — the product has that many decimal digits.

Finding products:

$$27.34 \times 6: 2734 \times 6 = 16404, \text{ with 2 decimal digits from 27.34 and 0 from 6} \rightarrow \mathbf{164.04}$$

$$4.23 \times 3.7: 423 \times 37 = 15651, \text{ with } 2+1 = 3 \text{ decimal digits} \rightarrow \mathbf{15.651}$$

$$0.432 \times 0.23: 432 \times 23 = 9936, \text{ with } 3+2 = 5 \text{ decimal digits} \rightarrow \mathbf{0.09936}$$

Cloth for curtains: 3 pieces of cloth, each 1.65 m long — total length = $1.65 \times 3 = \mathbf{4.95 \text{ m}}$.

Shopping bill: 4 notebooks at ₹15.50 each and 3 pens at ₹2.75 each — total = $(4 \times 15.50) + (3 \times 2.75) = 62.00 + 8.25 = \mathbf{₹70.25}$.

Stack of coins: each coin is 1.45 mm thick; a stack of 36 coins — height = $1.45 \times 36 = 52.2 \text{ mm} = \mathbf{5.22 \text{ cm}}$.

Buying oranges: oranges cost ₹56.50 per kg; 2.250 kg bought — cost = $56.50 \times 2.250 = \mathbf{₹127.125}$, about ₹127.13.

Selling milk at a profit: 50 litres sold at a profit of ₹6.40 per litre — total profit = $50 \times 6.40 = \mathbf{₹320}$.

Patterns in Decimal Products (using $18 \times 12 = 216$)

Once $18 \times 12 = 216$ is known, related decimal products can be found just by counting decimal places, without fresh multiplication:

$$18 \times 1.2 = \mathbf{21.6}$$

$$18 \times 0.12 = \mathbf{2.16}$$

$$1.8 \times 1.2 = \mathbf{2.16}$$

$$0.18 \times 0.12 = \mathbf{0.0216}$$

$$0.018 \times 0.012 = \mathbf{0.000216}$$

$$1.8 \times 12 = \mathbf{21.6}$$

Why the product changes size: if both factors are greater than 1, the product exceeds both; if both factors are between 0 and 1, the product is smaller than both; if one factor is between 0 and 1 and the other is greater than 1, the product lies between the two factors.

Dividing Decimal Numbers (Figure It Out – Page 83)

Converting fractions to decimals (write the denominator as a power of 10, or use long division):

$$18/5 = 36/10 = \mathbf{3.6}$$

$$415/4 = 10375/100 = \mathbf{103.75}$$

$$1217/2 = 6085/10 = \mathbf{608.5}$$

$$4827/8 = 603375/1000 = \mathbf{603.375}$$

Shifting the decimal point in the quotient: once $132 \div 4 = 33$ is known, moving the decimal point in the dividend moves it the same way in the quotient:

$$132 \div 4 = \mathbf{33}$$

$$13.2 \div 4 = \mathbf{3.3}$$

$$1.32 \div 4 = \mathbf{0.33}$$

$$0.132 \div 4 = \mathbf{0.033}$$

Effect of a decimal divisor on the quotient (dividend fixed at 2.46):

$$2.46 \div 1.5 = \mathbf{1.64}$$

$$2.46 \div 0.15 = \mathbf{16.4}$$
 (divisor 10 times smaller $\rightarrow$ quotient 10 times bigger)

$$2.46 \div 0.015 = \mathbf{164}$$
 (divisor 100 times smaller than 1.5 $\rightarrow$ quotient 100 times bigger)

Division with a Decimal Divisor (Figure It Out – Page 86–87)

Method: multiply both the dividend and the divisor by the same power of 10 so the divisor becomes a whole number, then divide as usual — the quotient does not change. For example, $48.65 \div 3.5$ becomes $486.5 \div 35$ (both multiplied by 10) = **13.9**.

Long-division quotients:

$$24.86 \div 1.2 \rightarrow 248.6 \div 12 = \mathbf{20.71...}$$
 (a non-terminating quotient)

$$5.728 \div 1.52 \rightarrow 572.8 \div 152 = \mathbf{3.76...}$$
 (a non-terminating quotient)

Sharing a wooden plank: a 4 m plank cut into 5 equal pieces — each piece = $4 \div 5 = 0.8$ m.

Regular polygon perimeter: a 12-sided regular polygon has perimeter 208.8 cm — each side = $208.8 \div 12 = 17.4$ cm.

Sharing juice: 3 litres of juice shared equally among 8 people — each share = $3 \div 8 = 0.375$ litres = **375 mL**.

Fuel efficiency: a vehicle covers 234.45 km using 12.6 litres of petrol — efficiency = $234.45 \div 12.6 \approx 18.61$ km/litre.

Dividing flour: 13.5 kg of flour divided equally into 15 packets — each packet = $13.5 \div 15 = 0.9$ kg.

Look Before You Leap – Real-Life Applications (Pages 93–95)

Comparing prices per gram: potato chips work out to about ₹0.30 per gram and peanut chikki to about ₹0.34 per gram — comparing the unit rate directly (not just the pack price) shows which snack is cheaper per gram, even when pack sizes differ.

Combining profit and loss: a vendor earns a profit of ₹5 on each of 35 units sold, but also has to write off 3 spoiled units worth ₹30 each — net profit = $(35 \times 5) - (3 \times 30) = 175 - 90 = \text{₹}85$.

Bookshelf capacity: a 160 cm shelf holds books that are each 2.5 cm thick — number of books = $160 \div 2.5 = 64$ books, fitting exactly with no space left over.

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