

Grade 6 - Multi-Digit and Decimal Operations - Answer Key

Common Core 6.NS.B.2, 6.NS.B.3 · maths-pdf.fr/en/

This **decimal operations answers** for 6th Grade covers multi-digit and decimal operations (Common Core 6.NS.B.2, 6.NS.B.3), with a free PDF to print.

Check your division and decimal work here. Each solution shows the place-value step, the partial products or partial quotients, and a final answer in bold. Several solutions also include a check by multiplication or an area model.

Grade 6 · Common Core State Standards: **6.NS.B.2, 6.NS.B.3**

Decimal operations answers: exercises 1 to 10

Exercise 1 - Divide a 4-digit number

Use partial quotients.

$$18 \times 200 = 3,600, \text{ remaining } 4,536 - 3,600 = 936.$$

$$18 \times 50 = 900, \text{ remaining } 936 - 900 = 36.$$

$$18 \times 2 = 36, \text{ remaining } 36 - 36 = 0.$$

Add the partial quotients: 252.

$$\text{Check: } 252 \times 18 = 4,536.$$

252

Exercise 2 - Divide with a zero

Use partial quotients.

$$24 \times 300 = 7,200, \text{ remaining } 7,920 - 7,200 = 720.$$

$$24 \times 30 = 720, \text{ remaining } 720 - 720 = 0.$$

Add the partial quotients: 330.

Check: $330 \times 24 = 7,920$.

330

Exercise 3 - Divide a 5-digit number

Use partial quotients.

$15 \times 800 = 12,000$, remaining $12,345 - 12,000 = 345$.

$15 \times 20 = 300$, remaining $345 - 300 = 45$.

$15 \times 3 = 45$, remaining $45 - 45 = 0$.

Add the partial quotients: 823.

Check: $823 \times 15 = 12,345$.

823

Exercise 4 - Two-digit divisor

Use partial quotients.

$31 \times 100 = 3,100$, remaining $5,208 - 3,100 = 2,108$.

$31 \times 60 = 1,860$, remaining $2,108 - 1,860 = 248$.

$31 \times 8 = 248$, remaining $248 - 248 = 0$.

Add the partial quotients: 168.

Check: $168 \times 31 = 5,208$.

168

Exercise 5 - Add decimals

Line up the decimal points and add zeros as place holders: 3.75, 12.40, 0.60.

$3.75 + 12.40 + 0.60 = 16.75$

16.75

Exercise 6 - Subtract decimals

Write 20 as 20.000 and line up the decimal points.

$$20.000 - 7.368 = 12.632$$

12.632

Exercise 7 - Multiply decimals

Partial products: $6 \times 4 = 24$, $6 \times 0.2 = 1.2$, $0.3 \times 4 = 1.2$, $0.3 \times 0.2 = 0.06$.

$$24 + 1.2 + 1.2 + 0.06 = 26.46$$

26.46

x	4	0.2
6	24	1.2
0.3	1.2	0.06

The four partial products add to 26.46.

Exercise 8 - Decimal times decimal

Multiply as whole numbers: $36 \times 25 = 900$.

There are $2 + 2 = 4$ decimal places, so move the decimal point 4 places: 0.0900.

0.09

Exercise 9 - Divide by a decimal

Multiply both numbers by 10: $72 \div 9 = 8$.

8

Exercise 10 - Divide by hundredths

Multiply both numbers by 100: $1890 \div 7 = 270$.

270

Exercises 11 and up

Exercise 11 - Divide a decimal by a whole number

$45.6 \div 12$: 12 goes into 45 three times (36), remainder 9.6; 12 goes into 96 tenths eight times.

$$12 \times 3.8 = 45.6$$

3.8

Exercise 12 - Whole number by decimal

Multiply both numbers by 10: $90 \div 4 = 22.5$.

22.5

Exercise 13 - Product with a one

$125 \times 8 = 1000$, and there are $1 + 2 = 3$ decimal places.

1000 with 3 decimal places is 1.000.

1

Exercise 14 - School lunch receipt

Sandwiches: $\$6.75 \times 3 = \$20.25$. Juices: $\$2.40 \times 2 = \$4.80$.

$$\$20.25 + \$4.80 + \$1.85 = \$26.90$$

\$26.90

Exercise 15 - Gas cost

12.4×3.45 : $124 \times 345 = 42780$, with $1 + 2 = 3$ decimal places.

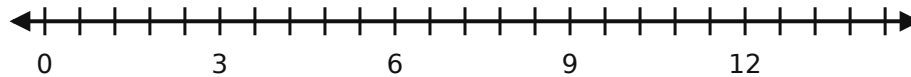
$$42.780 = 42.78$$

\$42.78

Exercise 16 - Ribbon pieces

Multiply both numbers by 10: $144 \div 6 = 24$.

24 pieces

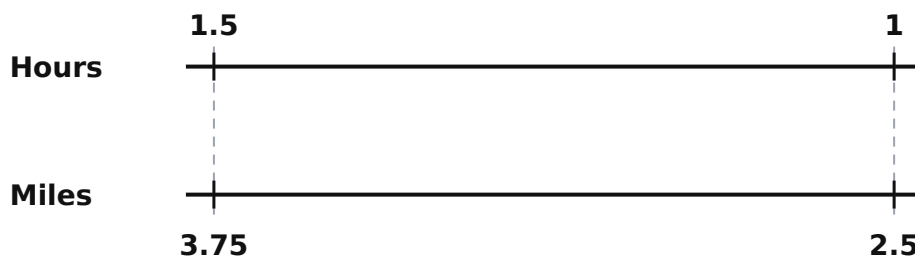


Twenty-four jumps of 0.6 meter reach 14.4.

Exercise 17 - Walking speed

$3.75 \div 1.5$: multiply both by 100 to get $375 \div 150 = 2.5$.

2.5 miles per hour



Dividing both numbers by 1.5.

Exercise 18 - Cookie boxes

$1,008 \div 24 = 42$.

$\$9.60 \times 42 = \$403.20$

42 boxes; \$403.20

Exercise 19 - Estimate then divide

Estimate: $50 \div 1 = 50$, or $48 \div 0.8 = 60$.

Exact: $496 \div 8 = 62$.

Exercise 20 - Spot the error

$4 \times 3 = 12$, but there are $1 + 1 = 2$ decimal places in the factors, so the product has 2 decimal places: 0.12.

Check: 0.4 is less than 1, so the product must be less than 0.3.

0.12

Key facts behind this decimal operations answers**Key facts**

- Line up decimal points to add or subtract.
- To multiply decimals, multiply as whole numbers and count the decimal places in both factors.
- To divide by a decimal, multiply the divisor and dividend by the same power of 10.
- Partial quotients subtract friendly multiples of the divisor.
- Estimate first to check the position of the decimal point.

How to use this decimal operations answers

Cover each solution, solve the exercise again, then uncover it and compare every line. If your answer differs, find the first step that changed and redo the exercise from there.

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