

Grade 6 · Adding, Subtracting, Multiplying and Dividing Decimals · Worksheet Answer Key

Common Core 6.NS.B.3 · mathovore.fr

This answer key gives complete worked solutions for all 20 problems on the decimal operations worksheet. Each solution shows the aligned digits, the whole-number product or quotient, and where the decimal point goes, so students can find any slip.

Grade 6 Common Core: 6.NS.B.3

Problem 1: Add decimals

Line up the decimal points: $4.75 + 12.60$. Hundredths: 5. Tenths: $7 + 6 = 13$, write 3 and carry 1. Ones: $4 + 2 + 1 = 7$. Tens: 1.

17.35

$$\begin{array}{r} 4.75 \\ + 12.60 \\ \hline 17.35 \end{array}$$

$$4.75 + 12.6 = 17.35$$

Problem 2: Line Up and Add

a. $6.40 + 13.78 = 20.18$

b. $0.095 + 2.500 = 2.595$

c. $15.00 + 0.07 = 15.07$

Problem 3: Subtract decimals

Write $20.30 - 7.84$. Subtract hundredths: $10 - 4 = 6$. Tenths: $2 - 8$ needs a borrow, $12 - 8 = 4$. Ones: $9 - 7 = 2$. Tens: 1.

Check: $12.46 + 7.84 = 20.30$.

12.46

$$\begin{array}{r}
 20.30 \\
 - 7.84 \\
 \hline
 12.46
 \end{array}$$

$$20.3 - 7.84 = 12.46$$

Problem 4: Subtract with Zeros

- a. $9.00 - 3.46 = 5.54$
- b. $12.05 - 8.70 = 3.35$
- c. $0.500 - 0.037 = 0.463$
- d. $100.00 - 64.29 = 35.71$

Problem 5: Add three numbers

Write each number with three decimal places: $3.500 + 0.275 + 12.000$. $3.500 + 0.275 = 3.775$.
 $3.775 + 12 = 15.775$.

15.775

Problem 6: Powers of 10

Multiplying by 10, 100, or 1000 moves the decimal point right 1, 2, or 3 places. Dividing moves it left.

- a. 2 places right: 348.2
- b. 3 places right: 67
- c. 1 place left: 5.29
- d. 3 places left: 0.0075

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths	
		3	4	8	2	3.482
3	4	8	2			348.2

Each digit moves 2 places to the left.

Problem 7: Multiply by a whole number

Multiply $83 \times 4 = 332$. The factor 8.3 has 1 decimal place and 4 has none, so the product has 1

decimal place.

Estimate: $8 \times 4 = 32$, close to 33.2.

33.2

Problem 8: Multiply two decimals

Multiply $48 \times 325 = 15,600$. The factors have $1+2=3$ decimal places, so the product is $15.600 = 15.6$.

Estimate: $5 \times 3 = 15$, close to 15.6.

15.6



Count the decimal places in both factors.

Problem 9: Decimal Products

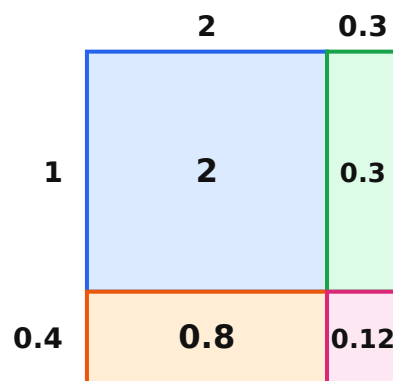
- a. $7 \times 8 = 56$ with 2 decimal places: 0.56
- b. $36 \times 25 = 900$ with 3 decimal places: $0.900 = 0.9$
- c. $124 \times 53 = 6572$ with 2 decimal places: 65.72
- d. $45 \times 62 = 2790$ with 4 decimal places: $0.2790 = 0.279$

Problem 10: Area Model Product

Top left: $2 \times 1 = 2$. Top right: $0.3 \times 1 = 0.3$. Bottom left: $2 \times 0.4 = 0.8$. Bottom right: $0.3 \times 0.4 = 0.12$.

$$2 + 0.3 + 0.8 + 0.12 = 3.22$$

$$2.3 \times 1.4 = 3.22$$



The four areas add to 3.22.

Problem 11: Divide by a whole number

The divisor 12 is a whole number. Divide 468 by 12: 12 into 46 is 3 (36), remainder 10. Bring down 8 to get 108: $9 \times 12 = 108$. Place the decimal point above the point in the dividend.

Check: $12 \times 3.9 = 46.8$.

3.9

Problem 12: Long Division Quotients

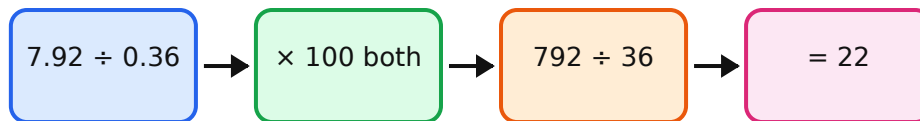
- a. $9 \times 6.5 = 58.5$, so 6.5
- b. $24 \times 0.38 = 9.12$, so 0.38
- c. $15 \times 0.045 = 0.675$, so 0.045
- d. $74.00 \div 8$: $8 \times 9 = 72$, remainder 2; $20 \div 8 = 2$ remainder 4; $40 \div 8 = 5$. The quotient is 9.25.

Problem 13: Divide by a decimal

The divisor 0.36 has 2 decimal places. Multiply both numbers by 100: $792 \div 36$. 36 into 79 is 2 (72), remainder 7. Bring down 2 to get 72: $2 \times 36 = 72$.

Check: $0.36 \times 22 = 7.92$.

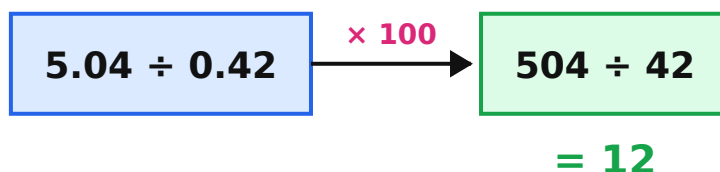
22



Both decimal points move two places.

Problem 14: Dividing by Decimals

- a. Multiply both by 100: $504 \div 42 = 12$
- b. Multiply both by 10: $189 \div 7 = 27$
- c. Multiply both by 100: $37.8 \div 9 = 4.2$
- d. Multiply both by 1000: $12000 \div 15 = 800$



Same quotient after multiplying both numbers by 100.

Problem 15: School store purchase

Notebooks: $3 \times \$2.35 = \$7.05$. Total: $\$7.05 + \$18.99 = \$26.04$. Change: $\$30.00 - \$26.04 = \$3.96$.

Total \\$26.04; change \\$3.96.

Problem 16: Filling the Tank

Cost: 11.6×3.45 . Since $116 \times 345 = 40020$ and the factors have 3 decimal places in all, the product is 40.020.

Change: $50 - 40.02 = 9.98$

The gas costs **\$40.02** and Ethan receives **\$9.98** in change.

Problem 17: Ribbon pieces

Divide $14.4 \div 0.45$. Multiply both by 100: $1,440 \div 45$. 45 into 144 is 3 (135), remainder 9. Bring down 0 to get 90: $2 \times 45 = 90$. Quotient 32.

Check: $0.45 \times 32 = 14.4$.

32 pieces

Problem 18: Trail Mix Bags

Bags: $7.5 \div 0.25 = 750 \div 25 = 30$.

Money collected: $30 \times 2.75 = 82.50$.

Profit: $82.50 - 41.80 = 40.70$.

Aisha fills **30 bags**, collects **\$82.50**, and earns a profit of **\$40.70**.

Problem 19: Weekly training miles

Weekdays: $5 \times 3.75 = 18.75$ miles. Add Saturday: $18.75 + 6.4 = 25.15$ miles per week.

Four weeks: $4 \times 25.15 = 100.6$ miles. Since $100.6 \geq 100$, he reaches the goal.

25.15 miles in one week; yes, 100.6 miles in 4 weeks.

Problem 20: Relay Race Times

Total: $12.84 + 13.07 + 12.95 + 13.20 = 52.06$ seconds.

Difference from the goal: $52.06 - 52 = 0.06$ second.

Mean per leg: $52.06 \div 4 = 13.015$ seconds.

The team finished in **52.06 s**, which is **0.06 s over** the goal, with a mean of **13.015 s** per leg.