

Grade 7 - Multistep Problems with Rational Numbers - Answer Key

Common Core 7.EE.B.3 · maths-pdf.fr/en/

Use this answer key to check your work on the multistep problems worksheet. Every solution shows the steps, and the final answer appears in bold. If your answer is different, compare each step and look for the first place where the work changes.

Grade 7 · Common Core State Standards: **7.EE.B.3**

Exercise 1 - Fraction to percent

$$3 \div 8 = 0.375.$$

$$0.375 \times 100 = 37.5\%$$

0.375 and 37.5%

Fraction	Decimal	Percent
3/8	0.375	37.5%

Completed row.

Exercise 2 - Decimal to fraction

$$0.35 = \frac{35}{100} = \frac{7}{20}$$

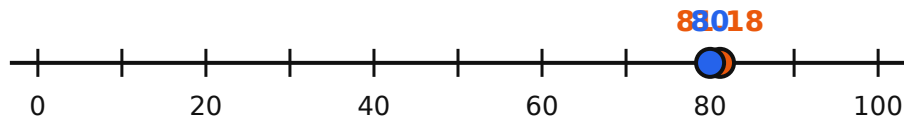
$$\frac{7}{20}$$

Exercise 3 - Estimate first

Estimate: $20 \times 4 = 80.$

Exact: $19.8 \times 4.1 = 81.18.$

About 80; exactly 81.18



The estimate and exact answer are close.

Exercise 4 - Mixed forms

$$\frac{3}{4} = 0.75.$$

$$0.75 + 0.5 = 1.25$$

1.25

Exercise 5 - Negative decimal and fraction

$$-2.5 + 0.75 = -1.75$$

-1.75

Exercise 6 - Part of a part

$$\frac{3}{5} \times 150 = 90.$$

$$0.20 \times 90 = 18$$

18

Exercise 7 - Overtime pay

$$\text{Regular: } 12.50 \times 40 = 500.$$

$$\text{Overtime rate: } 12.50 \times 1.5 = 18.75. \quad 18.75 \times 6 = 112.50.$$

$$500 + 112.50 = 612.50$$

\$612.50

Exercise 8 - Gift card

$$\text{Shirts: } 3 \times 11.95 = 35.85.$$

Tax: $0.08 \times 35.85 = 2.868$, so the total is $35.85 + 2.868 = 38.718 \approx 38.72$.

$$50 - 38.72 = 11.28$$

Total \$38.72; \$11.28 left

Item	Amount
Shirts	\$35.85
Tax	\$2.87
Total	\$38.72
Left on card	\$11.28

Totals.

Exercise 9 - Cutting lumber

Cut length: $3 \times 2\frac{3}{4} = 8\frac{1}{4}$, and $8\frac{1}{4} + 1\frac{1}{2} = 9\frac{3}{4}$.

$$12 - 9\frac{3}{4} = 2\frac{1}{4}$$

$2\frac{1}{4}$ feet

Exercise 10 - Split the bill

Tip: $0.18 \times 64.80 = 11.664$.

Total: $64.80 + 11.664 = 76.464$.

$$76.464 \div 4 = 19.116 \approx 19.12$$

\$19.12 each

Exercise 11 - Smaller recipe

$$0.70 \times 2.5 = 1.75$$

$1\frac{3}{4}$ cups

Exercise 12 - Is it reasonable?

Estimate: $0.20 \times 400 = 80$.

Exact: $0.187 \times 392 = 73.304$.

73 is close to the exact value.

Yes; exactly 73.304

Exercise 13 - Distance after rests

First part: $\frac{3}{5} \times 7.5 = 4.5$. Remaining: 3 miles.

Second part: $\frac{2}{3} \times 3 = 2$.

$$3 - 2 = 1$$

1 mile

Exercise 14 - Fundraiser

$35\% + \frac{2}{5} = 0.35 + 0.40 = 0.75$ of the goal.

Remaining: $1 - 0.75 = 0.25$, and $0.25 \times 1200 = 300$

\$300

Exercise 15 - Phone plans

100 texts: A is $25 + 0.10 \times 100 = 35$, B is 40.

200 texts: A is $25 + 0.10 \times 200 = 45$, B is 40.

100 texts: Plan A (\$35 vs \$40); 200 texts: Plan B (\$40 vs \$45)

Texts	Plan A	Plan B
100	\$35	\$40
200	\$45	\$40

Plan costs.

Exercise 16 - Scaling a recipe

$$\text{Flour: } 2\frac{1}{4} \times 1.5 = \frac{9}{4} \times \frac{3}{2} = \frac{27}{8} = 3\frac{3}{8}.$$

$$\text{Sugar: } \frac{3}{4} \times 1.5 = 1.125, \text{ then } 0.80 \times 1.125 = 0.9$$

$3\frac{3}{8}$ cups of flour; 0.9 cup of sugar

Exercise 17 - Monthly budget

$$\text{Rent: } 0.30 \times 2400 = 720. \text{ Food: } 2400 \div 6 = 400. \text{ Savings: } 0.15 \times 2400 = 360.$$

$$\text{Total: } 720 + 400 + 360 = 1480.$$

$$2400 - 1480 = 920$$

Rent \$720, food \$400, savings \$360; \$920 left

Budget item	Amount
Rent	\$720
Food	\$400
Savings	\$360
Left over	\$920

The budget.

Exercise 18 - Concert tickets

$$\text{Tickets: } 4 \times 45 = 180. \text{ After coupon: } 180 - 10 = 170.$$

$$\text{Fee: } 0.12 \times 170 = 20.40.$$

$$170 + 20.40 = 190.40$$

\$190.40

Exercise 19 - Savings with debts

$$-12.50 \times 4 = -50.$$

$$-50 + 30 = -20.$$

$$\frac{1}{2} \times 20 = 10, \text{ so } -20 - 10 = -30$$

-\$30

Exercise 20 - Price change

$$\text{Increase: } (36 - 30) \div 30 = 0.20 = 20\%.$$

$$\text{Drop: } \frac{1}{6} \times 36 = 6, \text{ so } 36 - 6 = 30$$

20% increase; final price \$30