

Rational Reality Check

Solve, convert, and estimate with rational numbers.

GRADE 7 • 7.EE.B.3

CCSS.Math.Content.7.EE.B.3 "Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically..."

NAME _____

DATE _____

CHOOSE A USEFUL FORM

When a problem uses decimals, fractions, and negative numbers, choose a form that makes the calculations easier. Follow the order of operations, then use a quick estimate to check whether your answer makes sense.

WORKED EXAMPLE

Calculate: $-4.8 + 2.35 - 1.5$

1. $-4.80 + 2.35 = -2.45$.

2. $-2.45 - 1.50 = -3.95$.

3. The result is negative, which makes sense because the negative amounts are larger.

Answer: -3.95

PRACTICE 6 problems

1 Calculate: $-3.6 + 5.25 - 2.4$

ANSWER _____

2 Estimate, then calculate: $7/8 - 1/3 + 1/4$

ANSWER _____

3 Calculate: $-2.5 + 3/4 - 1.1$

ANSWER _____

4 Calculate: $6.4 + (-0.7) \times 3$

ANSWER _____

5 Calculate: $-2 \frac{1}{4} + 5/6 - 1/3$

ANSWER _____

6 The temperature is -1.75 degrees. It rises 2.6 degrees and then falls 0.9 degrees. What is the final temperature?

ANSWER _____

APPLY IT Show your work

- 1** Estimate, then calculate. Kai has \$18.60 in a game-download account. Kai buys 3 add-ons for \$2.75 each and receives a \$1.20 refund for an earlier purchase. How much money is in the account now?

WORK SPACE

ANSWER _____

- 2** In a tournament game, a player's score starts at -12.5 points after a penalty. The player earns $4\frac{3}{4}$ points in each of 3 rounds, then loses 2.25 points for a rule violation. What is the final score?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A club's account balance is -\$16.80. The club sells 7 snack cards for \$3.25 each. Then the club uses $\frac{1}{5}$ of its sales money to buy supplies. What is the new account balance? Explain why your answer is reasonable using an estimate.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Calculate: $-3.6 + 5.25 - 2.4$	-0.75
2	Estimate, then calculate: $7/8 - 1/3 + 1/4$	Estimate: about 1; exact answer: 19/24
3	Calculate: $-2.5 + 3/4 - 1.1$	-2.85
4	Calculate: $6.4 + (-0.7) \times 3$	4.3
5	Calculate: $-2 \frac{1}{4} + 5/6 - 1/3$	-1 $\frac{3}{4}$
6	The temperature is -1.75 degrees. It rises 2.6 degrees and then falls 0.9 degrees. What is the final temperature?	-0.05 degrees

PART 2 • APPLY IT

1. **\$11.55** The add-ons cost $3 \times \$2.75 = \8.25 . Calculate $\$18.60 - \$8.25 + \$1.20 = \11.55 ; an estimate of about \$12 is reasonable.
2. **-0.5 points** The player earns $3 \times 4.75 = 14.25$ points. Calculate $-12.5 + 14.25 - 2.25 = -0.5$.

CHALLENGE

Sales money is \$22.75, and supplies cost \$4.55, so the balance is $-\$16.80 + \$22.75 - \$4.55 = \1.40 . Estimating gives about $-\$17 + \$23 - \$5 = \1 , so a small positive balance is reasonable.

Accept equivalent decimal and fraction forms where appropriate, such as -1.75 for $-1 \frac{3}{4}$. Accept reasonable estimates that support the exact answer.