

Decimal Proof Power

Use equations, estimates, and place-value words to support your answer.

GRADE 5 • TEKS 5.1.G

5.1.G “display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.”

NAME _____

DATE _____

EXPLAIN DECIMAL COMPUTATION

When you add or subtract decimals, line up the decimal points so the same place values are in each column. Write an equation, compute carefully, and use an estimate or place-value words to justify why your answer makes sense.

WORKED EXAMPLE

Find $28.46 - 7.89$. Show how you know your answer is reasonable.

1. Estimate: $28 - 8 = 20$, so the answer should be near 20.
2. Align the decimal points so ones, tenths, and hundredths are in matching columns.
3. Subtract: $28.46 - 7.89 = 20.57$.

Answer: $28.46 - 7.89 = 20.57$. The answer is reasonable because 20.57 is close to the estimate of 20.

PRACTICE 6 problems

- 1** Find $6.72 + 4.09$. Write an equation and one sentence that explains why the decimal points must line up.

ANSWER _____

- 2** Find $15.30 - 8.47$. Write an equation and one sentence using the word hundredths.

ANSWER _____

- 3** Find $9.56 + 12.8$. Write an estimate, an equation, and one sentence that tells why your answer is reasonable.

ANSWER _____

- 4** A student says that $30.04 - 16.75 = 13.39$. Find the correct difference. Write an equation and one sentence that explains the student's error.

ANSWER _____

- 5** Find $7.08 + 0.95$. Write an equation and one sentence that names the place values you added.

ANSWER _____

- 6** Find $50.00 - 23.68$. Write an estimate and one sentence that uses the estimate to justify your answer.

ANSWER _____

APPLY IT Show your work

- 1** Maya has \$18.75 from her birthday and earns \$6.40 for helping a neighbor. She buys a digital game item for \$9.85. How much money does Maya have left? Write an equation and a sentence that uses an estimate to justify your answer.

WORK SPACE

ANSWER _____

- 2** Leo is training for a fun run with a goal of 25.00 miles. He runs 12.60 miles one week and 8.75 miles the next week. How many more miles does Leo need to run? Write an equation and a sentence that uses an estimate to justify your answer.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Nora says that $42.50 - 18.76 = 24.26$. Is Nora correct? Write the correct equation and explain what must happen when you subtract the hundredths and tenths.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Find $6.72 + 4.09$. Write an equation and one sentence that explains why the decimal points must line up.	$6.72 + 4.09 = 10.81$. I lined up the decimal points so tenths matched tenths and hundredths matched hundredths.
2	Find $15.30 - 8.47$. Write an equation and one sentence using the word hundredths.	$15.30 - 8.47 = 6.83$. I regrouped so I could subtract the hundredths correctly.
3	Find $9.56 + 12.8$. Write an estimate, an equation, and one sentence that tells why your answer is reasonable.	Estimate: $10 + 13 = 23$. $9.56 + 12.80 = 22.36$. The answer is reasonable because 22.36 is close to 23.
4	A student says that $30.04 - 16.75 = 13.39$. Find the correct difference. Write an equation and one sentence that explains the student's error.	$30.04 - 16.75 = 13.29$. The student made an error when regrouping across the decimal places.
5	Find $7.08 + 0.95$. Write an equation and one sentence that names the place values you added.	$7.08 + 0.95 = 8.03$. I added hundredths to hundredths, tenths to tenths, and ones to ones.
6	Find $50.00 - 23.68$. Write an estimate and one sentence that uses the estimate to justify your answer.	$50.00 - 23.68 = 26.32$. Estimate: $50 - 24 = 26$, so 26.32 is reasonable.

PART 2 • APPLY IT

- $18.75 + 6.40 - 9.85 = 15.30$. Maya has \$15.30 left; $19 + 6 - 10 = 15$, so the answer is reasonable.** Add Maya's starting money and earnings, then subtract the cost of the game item. An estimate of \$15 supports the exact answer of \$15.30.
- $25.00 - (12.60 + 8.75) = 3.65$. Leo needs 3.65 more miles; $25 - 21 = 4$, so the answer is reasonable.** First add the miles Leo has run, then subtract that total from his goal. The estimate of 4 miles is close to the exact amount of 3.65 miles.

CHALLENGE

Nora is not correct. $42.50 - 18.76 = 23.74$. You must regroup to subtract 6 hundredths from 0 hundredths, and then regroup again to subtract 7 tenths from 4 tenths.

Accept equivalent decimal forms with or without unnecessary trailing zeros, such as 12.8 and 12.80. Accept different accurate estimates and explanations if they correctly use place-value language and support the computed answer.