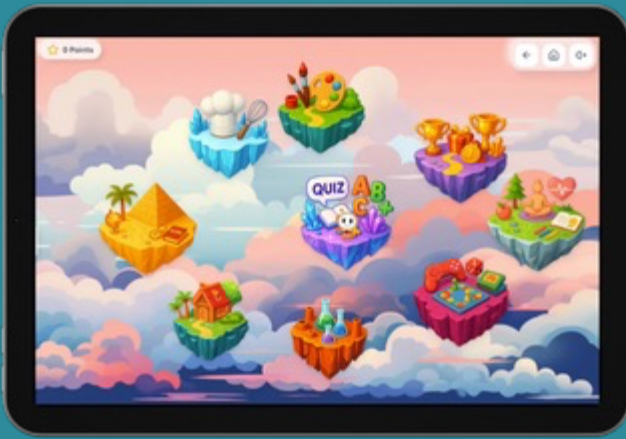


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Decimal Addition and Subtraction - Year 6

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Adding Decimals

1. Estimate the answer.

2. Line up the decimal points.

3. Add zeros to fill empty places.

4. Add from right to left.

5. Line up the decimal point straight down.

6. Check with your estimate and the inverse.

$$\begin{array}{r} 24.680 \\ + 3.750 \\ \hline 28.430 \end{array}$$

Place value first. Accuracy follows.



Subtracting Decimals

1. Estimate the answer.

2. Line up the decimal points.

3. Add zeros to fill empty places.

4. Regroup when needed.

5. Bring the decimal point straight down.

6. Check by adding the difference.

Tens	Ones	•	Tenths	Hundredths	Thousandths
6	5		9	0	0
-1	3	.	4	6	0
5	2	.	4	4	0

Keep every place-value column aligned.

Decimal Operations Quick Guide

1

ALIGN

Line up decimal points so ones, tenths, hundredths and thousandths stay in their correct columns.

Ones	Tenths	Hundredths	Thousandths
2	8	4	5
1	2	7	0

2

PLACEHOLDER ZEROS

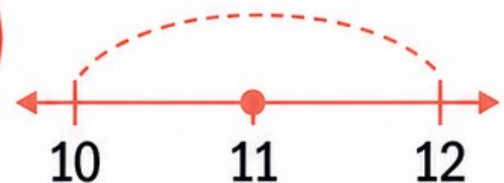
Zeros can hold empty places without changing a number: $4.6 = 4.600$

Ones	Tenths	Hundredths	Thousandths
4	6	0	0

3

ESTIMATE

Round first to find a sensible range for the answer.



4

CHECK

Addition can be checked with subtraction.
Subtraction can be checked with addition.



$$8.45 + 2.70 = 11.15$$
$$11.15 - 2.70 = 8.45$$

Align. Calculate. Check.

Name: _____

Date: _____

H	T	O	.	t	h	th

Align and Add Decimals



Line up the decimal points. Add placeholder zeros when needed. Estimate first, then calculate.

1. $4.6 + 3.27$

H	T	O	.	t	h	th

2. $18.045 + 2.9$

H	T	O	.	t		th

3. $0.708 + 6.32$

H	T	O	.	t	h	th

4. $45.123 + 2.9$

H	T	O	.	t	h	th

5. $9.009 + 0.991$

H	T	O	.	t		th

6. $126.4 + 37.85$

H	T	O	.	t	h	th

7. $3.12 + 1.008$

H		O	.	t	h	th

8. $0.486 + 0.074$

H	T	O	.	t	h	th

Which problem needed the most placeholder zeros? Explain.

H	T	O	.	t	h	th

Align and Add Decimals



Line up the decimal points. Add placeholder zeros when needed. Estimate first, then calculate.

1. $4.6 + 3.27$

H	T	O	.	t	h	th
		7	.	8	7	

2. $18.045 + 2.9$

H	T	O	.	t	h	th
2	0	.		4	5	

3. $0.708 + 6.32$

H	T	O	.	t	h	th
		7	.	0	2	8

4. $45.12 + 3.8$

H	T	O	.	t	h	th
5	4	.		0	5	6

5. $9.009 + 0.991$

H	T	O	.	t	h	th
		1	.			

6. $126.4 + 37.85$

H	T	O	.	t	h	th
1	6	4	.	2	5	

7. $3.1708 + 4.58$

H	T	O	.	t	h	th
		1	.	7	5	8

8. $0.486 + 0.074$

H	T	O	.	t	h	th
		0	.	5	6	

Which problem needed the most placeholder zeros? Explain.

Suggested: Problems 1, 2, 3, 4, 6 and 7 use placeholder zeros.

Date: _____

Align and Subtract Decimals


$$1. 9.4 - 2.75$$

					.				
—					.				
					.				

A 10x10 grid with a red 'X' and a minus sign. The red 'X' is formed by two thick red lines crossing in the center. A small black minus sign is located in the second row, first column.

					.					
—					.					
					.					

A 10x10 grid with a red 'X' and a minus sign. The 'X' is formed by two thick red diagonal lines crossing at the center. A minus sign is located in the second row, first column.

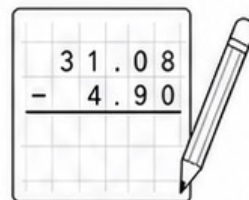
					.				
—					.				
					.				

				.			
-				.			
				.			

					.				
—					.				
					.				

Tens	Ones	Tenths	Hundredths	Thousandths

Align and Subtract Decimals



Line up the decimal points. Add placeholder zeros when needed. Estimate first, then calculate.

1. $9.4 - 2.75$

				9	.	4	0	
-				2	.	7	5	
				6	.	6	5	

2. $31.08 - 4.9$

				3	1	.	0	8
-						.	9	0
						.	8	

3. $12 - 0.684$

				1	2	.	0	0	0
-				0	.	6	8	4	
				1	1	.	3	1	6

4. $5.005 - 4.7$

				5	.	0	0	5
-				4	.	7	0	
				1	.	3	5	

5. $100 - 38.629$

				1	0	0	.	0	0
-				3	8	.	6	2	9
				6	1	.	3	7	1

6. $8.3 - 0.956$

				8	.	3	0	0
-				0	.	9	5	6
				7	.	3	4	4

7. $42.7 - 19.908$

				4	2	.	7	2	0
-				1	9	.	9	0	8
				2	2	.	8	1	2

8. $5.04 - 2.777$

				5	.	0	4	0
-				2	.	7	7	7
				2	.	2	6	3

How did placeholder zeros help you subtract accurately?

Placeholder zeros kept every place-value column aligned.

Name: _____

Date: _____

Adding Lists of Decimals

Rewrite each list vertically. Line up decimal points, add placeholder zeros, then check your sum.

1. $2.887 + 27.2 + 0.02$

					.				
					.				
					.				

= _____

2. $4.96 + 86.1487 + 1.012$

					.				
					.				
					.				

= _____

3. $3.44 + 21.69 + 67$

					.				
					.				
					.				

= _____

4. $6.87 + 0.22 + 2.09$

					.				
					.				
					.				

= _____

5. $8.7 + 2.3686 + 0.052$

					.				
					.				
					.				

= _____

6. $42.1824 + 8.978 + 3.038$

					.				
					.				
					.				

= _____

7. $1.2 + 0.6643 + 2.59$

					.				
					.				
					.				

= _____

8. $0.0844 + 14.09 + 0.4166$

					.				
					.				
					.				

= _____

What did you do before adding each list?

ANSWERS: _____

Date: _____

Adding Lists of Decimals

Rewrite each list vertically. Line up decimal points, add placeholder zeros, then check your sum.

1. $2.887 + 27.2 + 0.02$

					.				
					.				
					.				

$$= \underline{30.107}$$

2. $4.96 + 86.1487 + 1.012$

					.				
					.				
					.				

$$= \underline{92.1207}$$

3. $3.44 + 21.69 + 67$

					.				
					.				
					.				

$$= \underline{92.13}$$

4. $6.81 + 0.22 + 2.09$

					.				
					.				
					.				

$$= \underline{1309}$$

5. $8.7 + 2.3686 + 0.052$

					.				
					.				
					.				

$$= \underline{11.1206}$$

6. $42.1824 + 8.978 + 3.038$

					.				
					.				
					.				

$$= \underline{54.1984}$$

7. $100.2 + 1.6643 + 2.59$

					.				
					.				
					.				

$$= \underline{101.3843}$$

8. $0.0844 + 14.09 + 0.4166$

					.				
					.				
					.				

$$= \underline{14.591}$$

What did you do before adding each list?

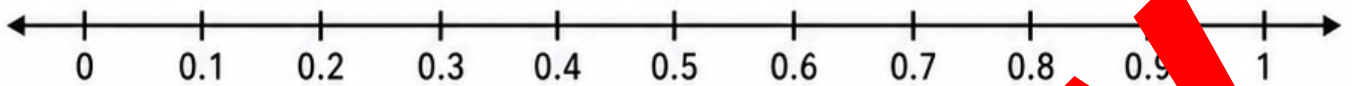
I aligned decimal points and added placeholder zeros before calculating.

Name: _____

Date: _____

Rounding Decimals

Round each number to the place shown. Use the digit to the right to decide.



Number	Nearest tenth	Nearest hundredth	Nearest thousandth
1. 32.746			
2. 0.9684			
3. 185.055			
4. 7.9994			
5. 64.2056			
6. 8.456			

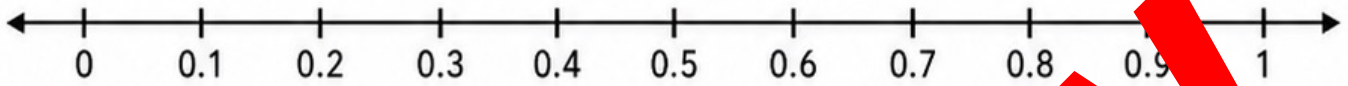
Explain why 7.9994 rounds to 8.0 to the nearest tenth.

ANSWERS: _____

Date: _____

Rounding Decimals

Round each number to the place shown. Use the digit to the right to decide.



Number	Nearest tenth	Nearest hundredth	Nearest thousandth
1. 32.746	32.7	32.75	32.746
2. 0.9684	1.0	0.97	0.968
3. 185.055	185.1	185.06	185.055
4. 7.9994	8.0	8.00	7.999
5. 64.2056	64.2	64.21	64.206
6. 903.482	903.5	903.48	903.482

Explain why 7.9994 rounds to 8.0 to the nearest tenth.

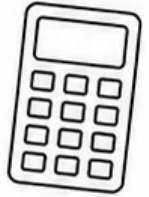
The hundredths digit is 9, so the tenths digit rounds up.
Regrouping turns 7.9 into 8.0.

Name: _____

Date: _____



Estimate, Solve and Check



Round to the nearest whole number for an estimate. Then calculate exactly and decide whether the answer is reasonable.

1. $40.6 + 24.35$

Estimate	Exact answer	Reasonable?

2. $95.3 - 9.57$

Estimate	Exact answer	Reasonable?

3. $86.994 + 3.2$

Estimate	Exact answer	Reasonable?

4. $901.2 - 49.628$

Estimate	Exact answer	Reasonable?

5. $0.98 + 12.8$

Estimate	Exact answer	Reasonable?

6. $64.2 + 57.907$

Estimate	Exact answer	Reasonable?

How can an estimate reveal a decimal-alignment error?



Estimate, Solve and Check



Round to the nearest whole number for an estimate. Then calculate exactly and decide whether the answer is reasonable.

1. $40.6 + 24.35$

Estimate	Exact answer	Reasonable?
65	64.95	Yes

2. $95.3 - 9.57$

Estimate	Exact answer	Reasonable?
85	85.73	Yes

3. $86.994 + 3.2$

Estimate	Exact answer	Reasonable?
90	90.194	Yes

4. $901.835 - 49.628$

Estimate	Exact answer	Reasonable?
851	851.835	Yes

5. $0.98 + 42.874$

Estimate	Exact answer	Reasonable?
44	43.854	Yes

6. $64.2 + 57.907$

Estimate	Exact answer	Reasonable?
122	122.107	Yes

How can an estimate reveal a decimal-alignment error?

An answer far from the estimate can reveal that place-value columns were misaligned.

Name: _____

Date: _____

Canteen Calculator

Use the menu to estimate and calculate each total. Show dollars and cents correctly.



RIVERBANK CANTEEN MENU	
Chicken wrap \$5.80	Smoothie \$4.75
Fruit cup \$3.25	Salad \$6.35
Yoghurt \$2.40	Muffin \$2.60
Water \$2.10	Toast \$5.95



1. Mia has \$12.00. She buys a chicken wrap and water. How much change?

Estimate	Exact total	Change

2. Arlo has \$10.00. He buys a fruit cup, yoghurt and water. How much change?

Estimate	Exact total	Change

3. Sienna has \$15.00. She buys a salad and smoothie. How much change?

Estimate	Exact total	Change

4. Choose three different items that cost less than \$12.00. Record the total and change from \$12.00.

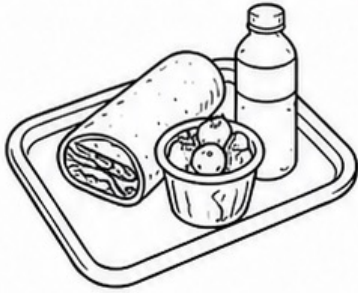
Estimate	Exact total	Change

ANSWERS: _____

Date: _____

Canteen Calculator

Use the menu to estimate and calculate each total. Show dollars and cents correctly.



RIVERBANK CANTEEN MENU	
Chicken wrap \$5.80	Smoothie \$4.75
Fruit cup \$3.25	Salad \$6.35
Yoghurt \$2.40	Muffin \$2.60
Water \$2.10	Toast \$5.95



1. Mia has \$12.00. She buys a chicken wrap and water. How much change?

Estimate	Exact total	Change
\$8	\$7.95	\$4.10

2. Arlo has \$10.00. He buys a fruit cup, yoghurt and water. How much change?

Estimate	Exact total	Change
\$7	\$7.75	\$2.25

3. Sienna has \$15.00. She buys a salad and smoothie. How much change?

Estimate	Exact total	Change
\$11	\$11.10	\$3.90

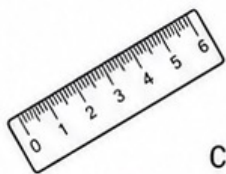
4. Choose three different items that cost less than \$12.00. Record the total and change from \$12.00.

Sample choice: muffin + fruit cup + water

Estimate	Exact total	Change
\$9	\$8.95	\$3.05

Name: _____

Date: _____



Decimal Measurement Problems

Choose addition or subtraction. Estimate, calculate and include the correct unit.



1. A walking trail has two sections: 1.84 km and 3.65 km. What is the total length?

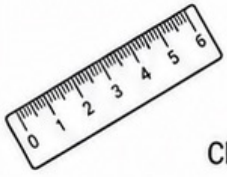
2. A recipe uses 549.8 g of flour and 65.4 g of cocoa. What is the combined mass?

3. A timber board is 8.45 m long. A 2.23 m piece is cut off. How much remains?

4. The school record is 138.2 seconds. A swimmer improves it by 2.45 seconds. What is the new record?

5. A box holds 2.5 L. After 0.8 L is used, how much remains?

6. A rope is 7.5 m long and another 1.27 m is joined to it. Is the total long enough for a 9 m task? By how much?



Decimal Measurement Problems



Choose addition or subtraction. Estimate, calculate and include the correct unit.

1. A walking trail has two sections: 1.84 km and 3.65 km. What is the total length?

$$1.84 + 3.65 = 5.49 \text{ km}$$

2. A recipe uses 549.8 g of flour and 65.4 g of cocoa. What is the combined mass?

$$549.8 + 65.4 = 615.2 \text{ g}$$

3. A timber board is 8.45 m long. A 2.23 m piece is cut off. How much remains?

$$8.45 - 2.23 = 6.22 \text{ m}$$

4. The school record is 138.2 seconds. A summer jumper improves it by 2.45 seconds. What is the new record?

$$138.2 - 2.45 = 135.75 \text{ seconds}$$

5. A tank holds 20 L. After 6.875 L is used, how much remains?

$$20 - 6.875 = 13.125 \text{ L}$$

6. A rope is 7.5 m long and another 1.27 m is joined to it. Is the total long enough for a 9 m task? By how much?

$$7.5 + 1.27 = 8.77 \text{ m; not enough; short by } 0.23 \text{ m}$$

Name: _____

Date: _____



Decimal Detective



Decide whether each calculation is correct. If it is incorrect, write the correct equation and explain the error.

A. $5.8 + 3.47 = 8.127$

☐

Correct

☐

Incorrect

Correction or evidence:

B. $12.04 - 0.9 = 11.14$

☐

Correct

☐

Incorrect

Correction or evidence:

C. $7.35 + 2.650 = 10.000$

☐

Correct

☐

Incorrect

Correction or evidence:

D. $40 - 3.72 = 36.28$

☐

Correct

☐

Incorrect

Correction or evidence:

E. $6.00 - 1.82 = 4.185$

☐

Correct

☐

Incorrect

Correction or evidence:

F. $0.46 + 0.054 = 0.514$

☐

Correct

☐

Incorrect

Correction or evidence:

What is the most common decimal mistake you found?



Decimal Detective



Decide whether each calculation is correct. If it is incorrect, write the correct equation and explain the error.

A. $5.8 + 3.47 = 8.127$

☐

Correct

☒

Incorrect

Correction or evidence:

$5.8 + 3.47 = 9.27$; decimal places were misaligned.

B. $12.04 - 0.9 = 11.14$

☒

Correct

☐

Incorrect

Correction or evidence:

$12.04 - 0.9 = 11.14$

C. $7.35 + 2.650 = 10.000$

☒

Correct

☐

Incorrect

Correction or evidence:

$7.350 + 2.650 = 10.000$

D. $40 - 3.72 = 36.28$

☒

Correct

☐

Incorrect

Correction or evidence:

$40.00 - 3.72 = 36.28$

E. $6.08 - 1.995 = 4.185$

☐

Correct

☒

Incorrect

Correction or evidence:

$6.080 - 1.995 = 4.085$

F. $0.46 + 0.054 = 0.514$

☒

Correct

☐

Incorrect

Correction or evidence:

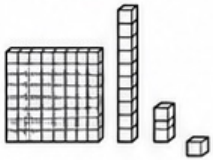
$0.460 + 0.054 = 0.514$

What is the most common decimal mistake you found?

The incorrect cases misaligned or mishandled place-value columns.

Name: _____

Date: _____



Making Decimal Lists



Rewrite each list vertically, align decimal points, add placeholder zeros and solve.

1. $99 + 0.28 + 0.0226$

Tens	Ones	.	Tenths	Hundredths	Thousandths	Ten-thousandths
		.				
		.				
		.				
+						

2. $8.3 + 42.73 + 0.07$

Tens	Ones	.	Tenths	Hundredths	Thousandths	Ten-thousandths
		.				
		.				
		.				
+						

3. $0.8489 + 9.266 + 31$

Tens	Ones	.	Tenths	Hundredths	Thousandths	Ten-thousandths
		.				
		.				
		.				
+						

4. $8.91 + 179 + 0.16$

Tens	Ones	.	Tenths	Hundredths	Thousandths	Ten-thousandths
		.				
		.				
		.				
+						

5. $77 + 0.31 + 9$

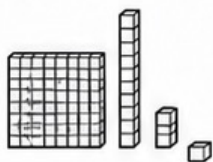
Tens	Ones	.	Tenths	Hundredths	Thousandths	Ten-thousandths
		.				
		.				
		.				
+						

6. $0.48 + 9 + 71.624$

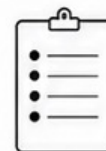
Tens	Ones	.	Tenths	Hundredths	Thousandths	Ten-thousandths
		.				
		.				
		.				
+						

Check one answer using a different strategy.





Making Decimal Lists



Rewrite each list vertically, align decimal points, add placeholder zeros and solve.

1. $99 + 0.28 + 0.0226 = 99.3026$

Tens	Ones	.	Tenths	Hundredths	Thousandths	Ten-thousandths
		.				
		.				
		.				
+						

2. $8.3 + 42.73 + 0.07 = 51.1$

Tens	Ones	.	Tenths	Hundredths	Thousandths	Ten-thousandths
		.				
		.				
		.				
+						

3. $0.8489 + 9.266 + 31 = 41.1149$

Tens	Ones	.	Tenths	Hundredths	Thousandths	Ten-thousandths
		.				
		.				
		.				
+						

4. $8.91 + 0.179 + 0.16 = 9.0879$

Tens	Ones	.	Tenths	Hundredths	Thousandths	Ten-thousandths
		.				
		.				
		.				
+						

5. $47.7 + 0.31 + 9 = 49.5101$

Tens	Ones	.	Tenths	Hundredths	Thousandths	Ten-thousandths
		.				
		.				
		.				
+						

6. $0.48 + 9 + 71.624 = 81.104$

Tens	Ones	.	Tenths	Hundredths	Thousandths	Ten-thousandths
		.				
		.				
		.				
+						

Sample check: subtract the smaller addends from the total.



Name: _____

Date: _____

Decimal Magic Squares



Fill each blank so every row, column and diagonal has the same magic sum.

A. Magic sum 1.5

0.8		0.6
	0.5	
0.4		0.2

B. Magic sum 15.0

8.0		5.0
	5.0	
4.0		2.0

C. Magic sum 6.0

3.2		2.4
	2.0	
1.6		0.8

Explain how you checked a diagonal.

Decimal Magic Squares



Fill each blank so every row, column and diagonal has the same magic sum.

A. Magic sum 1.5

0.8	0.1	0.6
0.3	0.5	0.1
0.4	0.9	0.2

B. Magic sum 15.0

8.0	1.0	6.0
3.0	5.0	7.0
4.0	9.0	2.0

C. Magic sum 6.0

3.2	0.4	2.4
1.2	2.0	2.8
1.6	3.6	0.8

Explain how you checked a diagonal.

I added the three values on each diagonal and checked that each total matched the magic sum.

Decimal Four in a Row

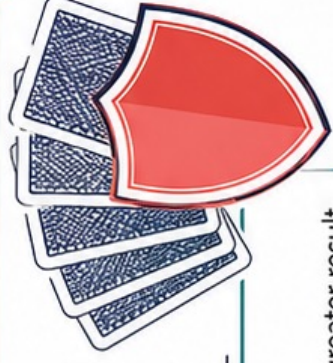
How to play

1. Roll one blue die and one yellow die.
2. Use the dice to select one row number and one column number.
3. Add the two decimals and cover the matching sum.
4. First player with four connected covers wins.



Row Choices	Column Choices					
	0.35	0.6	1.05	1.4	2.25	3.1
1.55		1.8	2.25	2.6	3.45	4.3
2.85		3.1	3.55	3.9	4.75	5.6
3.7			4.75	5.1	5.95	6.8
4.9	5.25	5.65	6.3	6.3	7.15	8.0
5.4	5.75	6.15	6.8	6.8	7.65	8.5
6.8	7.15	7.4	8.25	8.25	9.05	9.9

Decimal War



How to play

1. Each player draws eight digit cards.
2. Build a decimal number.
3. Choose ADD or SUBTRACT and calculate.
4. The greater result wins the round.

Player 1

Ones

Tenths

Hundredths

Thousandths

ADD

or

SUBTRACT

Player 2

Ones

Tenths

Hundredths

Thousandths

ADD

or

SUBTRACT



Use estimation to check before declaring a winner.

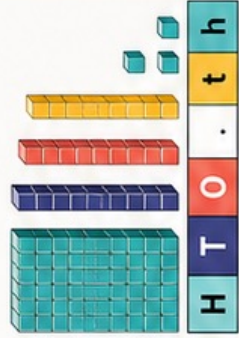
Decimal War Digit Cards

Cut out the cards. Shuffle. Each player draws eight.





Decimal Dice Duel



How to play

1. Roll four dice.
2. Use the digits to build two decimal numbers.
3. Choose ADD or SUBTRACT.
4. Estimate, calculate and check.
5. The greater correct result wins the round.

Player 1

--	--	--	--

Number 1 _____

Number 2 _____

ADD

or

SUBTRACT

Result

--

Player 2

--	--	--	--

Number 1 _____

Number 2 _____

ADD

or

SUBTRACT

Result

--



Round 1

.....

Round 2

.....

Round 3

.....

Round 4

.....

Round 5

.....

Strategic place value can change the result.

Jungle Decimal Expedition

Round each number to the nearest whole, then estimate. Show your rounded numbers and answer at each checkpoint.

1 $4.6 + 3.3$ _____

2 $7.8 - 4.2$ _____

3 $6.5 + 2.5$ _____

4 $9.1 - 3.7$ _____

5 $8.55 + 2.45$ _____

6 $1.1 + 1.52$ _____

7 $4.99 - 1.01$ _____

8 $6.66 - 3.34$ _____

Treasure challenge: $23.67 + 12.89$

Estimate first, then calculate the exact answer. How close was your estimate?

Jungle Decimal Expedition

ANSWERS

Round each number to the nearest whole, then estimate. Show your rounded numbers and answer at each checkpoint.

1 $4.6 + 3.3$

$5 + 3 = 8$

2 $7.8 - 4.2$

$8 - 4 = 4$

3 $6.5 + 2.5$

$7 + 3 = 10$

4 $9.1 - 3.7$

$9 - 4 = 5$

5 $8.5 - 2.45$

$8 - 2 = 7$

6 $7.5 + 1.52$

$7 + 2 = 9$

7 $1.99 - 1.01$

$5 - 1 = 4$

8 $6.66 - 3.34$

$7 - 3 = 4$

Treasure challenge: $23.67 + 12.89$

Estimate first, then calculate the exact answer. How close was your estimate?

Estimate: $24 + 13 = 37$

Exact: $23.67 + 12.89 = 36.56$

Difference: 0.44

Name: _____

Date: _____

Decimal Addition and Subtraction Assessment

Part A — Core Skills

Tens	Ones		Tenths	Hundredths	Thousandths
3	4	.	7	8	6



1. What is the value of the digit 7 in 34.786?

2. Write 5.6 using three decimal places.

3. $8.45 + 2.7 =$

4. $31.08 - 4.9 =$

5. $9.009 + 0.991 =$

6. $4.567 - 908 =$

7. Round 2056 to the nearest hundredth.

8. Estimate $901.463 - 49.628$ by rounding each number to the nearest whole.

Check at least two calculations using the inverse operation.



Decimal Addition and Subtraction Assessment



Part B — Applications

1. Mia has \$20.00. She buys a notebook for \$6.35 and a pen set for \$4.75. How much change does she receive?



2. A trail has two sections measuring 1.84 km and 3.65 km. What is the total distance?



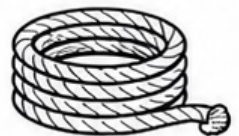
3. A tank holds 24.5 L. After 6.875 L is used, how much remains?



4. A swimmer's first time was 138.2 seconds. The next time was 2.45 seconds faster. What was the new time?



5. A 7.5 m rope is cut into a 1.27 m piece. Is the total at least 9 m? Show your calculation and explain.



6. A container holds 549.8 g. Add 65.4 g, then remove 120 g. What mass remains?



For one problem, write an estimate and explain why your exact answer is reasonable.

Decimal Addition and Subtraction Assessment

Name: _____

Date: _____

Part C — Reasoning

- A.** Arlo says $5.8 + 3.47 = 8.127$. Identify the error and find the correct answer.

- B.** True or false: $7.350 + 2.650 = 10.000$. Explain.

- C.** Find the missing addend: $12.4 + \square = 20.05$

- D.** Solve $75.005 - 6.47$. Check your answer with addition.

Write a word problem represented by $8.4 - 2.675$, then solve it.

- F.** Challenge: $12.75 + 8.625 + \square = 50$

Name: _____

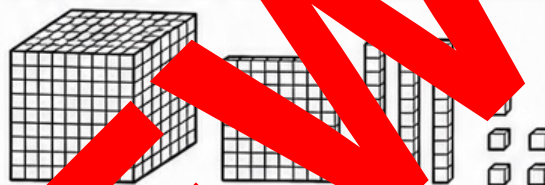
Date: _____

ANSWERS

Decimal Addition and Subtraction Assessment

Part A — Core Skills

Tens	Ones		Tenths	Hundredths	Thousandths
3	4	.	7	8	6



1. What is the value of the digit 7 in 34.786?

Tenths; value = 0.7

2. Write 5.6 using three decimal places.

5.600

3. $8.45 + 2.7 =$

11.15

4. $31.08 - 4.9 =$

26.18

5. $9.009 + 0.991 =$

10.000

6. $64.21 - 0.008 =$

64.202

7. Round 64.21056 to the nearest hundredth.

64.21

8. Estimate $901.463 - 49.628$ by rounding each number to the nearest whole.

$901 - 50 = 851$

Check at least two calculations using the inverse operation.

Example inverse check: $26.18 + 4.9 = 31.08$



Decimal Addition and Subtraction Assessment

ANSWERS



Part B — Applications

1. Mia has \$20.00. She buys a notebook for \$6.35 and a pen set for \$4.75. How much change does she receive?



$$\text{\$20.00} - \text{\$6.35} - \text{\$4.75} = \text{\$8.90}$$

2. A trail has two sections measuring 1.84 km and 3.65 km. What is the total distance?



$$1.84 + 3.65 = 5.49 \text{ km}$$

3. A tank holds 24.5 L. After 6.875 L is used, how much remains?



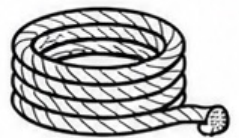
$$24.5 - 6.875 = 17.625 \text{ L}$$

4. A swimmer's first time was 138.2 seconds. The next time was 2.45 seconds faster. What was the new time?



$$138.2 - 2.45 = 135.75 \text{ seconds}$$

5. A 7.5 m rope is joined to a 7 m rope. Is the total as long as a 15 m rope? Show your calculation and explain.



$$7.5 + 7 = 14.5 \text{ m}; \text{ No, it is } 0.5 \text{ m short.}$$

6. A container holds 549.8 g. Add 65.4 g, then remove 120 g. What mass remains?



$$549.8 + 65.4 - 120 = 495.2 \text{ g}$$



For one problem, write an estimate and explain why your exact answer is reasonable.

Example: \$6 + \$5 ≈ \$11 spent, so about \$9 change; \$8.90 is reasonable.

Decimal Addition and Subtraction Assessment

ANSWERS

Name: _____

Date: _____

Part C — Reasoning

- A.** Arlo says $5.8 + 3.47 = 8.127$. Identify the error and find the correct answer.

The decimal points were misaligned. $5.80 + 3.47 = 9.27$.

- B.** True or false: $7.350 + 2.650 = 10.000$. Explain.

True. $7.350 + 2.650 = 10.000$.

- C.** Find the missing addend: $12.4 + \square = 20$.

7.65

- D.** Solve $75.005 - 6.47$ and check your answer with addition.

68.535, check: $68.535 + 6.47 = 75.005$.

- E.** Write a word problem represented by $8.4 - 2.675$, then solve it.

Sample: A ribbon is 8.4 m long and 2.675 m is cut off. 5.725 m remains.

- F.** Challenge: $12.75 + 8.625 + \square = 50$

28.625

Decimal Addition and Subtraction — Assessment Rubric

	BEGINNING	DEVELOPING	ACHIEVING	CONFIDENT	EXCEEDING
 Place-value alignment	Needs substantial support to align decimals; frequent errors.	Partial understanding of place value; some correct alignment.	Accurate in familiar tasks; minor errors in aligning decimals.	Accurate and independent across tasks; aligns decimals consistently.	Efficient, flexible and precise; clearly justifies alignment choices.
 Addition accuracy	Needs substantial support with decimal addition; frequent errors.	Partial understanding; some correct steps but errors remain.	Accurate in familiar tasks; minor calculation errors only.	Accurate and independent across tasks; checks work for accuracy.	Efficient, flexible and precise; clearly justifies strategy.
 Subtraction accuracy	Needs substantial support with decimal subtraction; frequent errors.	Partial understanding; some correct steps but errors remain.	Accurate in familiar tasks; minor calculation errors.	Accurate and independent across tasks; checks work for accuracy.	Efficient, flexible and precise; clearly justifies strategy.
 Estimation and checking	Needs substantial support to estimate or check; frequent errors.	Partial understanding; some estimates or checks attempted.	Accurate in familiar tasks; minor errors.	Accurate and independent across tasks; checks reasonableness of answers.	Efficient, flexible and precise; uses strong estimates and checks to justify answers.
 Applied problem solving	Needs substantial support to understand problems; frequent errors.	Partial understanding; some relevant strategies used.	Solves familiar problems correctly; minor errors in working.	Accurate and independent across tasks; checks appropriateness of strategy.	Efficient, flexible and precise; adapts strategy creatively and justifies solutions.
 Explanation and reasoning	Needs substantial support to explain thinking; limited reasoning.	Partial understanding; explanation includes some relevant ideas.	Explains strategy clearly in familiar tasks; minor gaps in reasoning.	Accurate and independent across tasks; explains strategy clearly and uses valid mathematical language.	Efficient, flexible and precise; clearly justifies strategy with strong mathematical reasoning.

Overall level: _____

Teacher comment: _____

Date: _____

Decimal Addition and Subtraction



Learning Intention

Add and subtract decimals accurately using place value.

Estimate before calculating and use an inverse operation to check.

Apply decimal operations to money, measurement and multi-step problems.



Decimal Place Value

Digits to the right of the decimal point show tenths, hundredths and thousandths.

A placeholder zero preserves value: $6.4 = 6.40 = 6.400$.

Read each digit by its position and choose an operation strategy.



Why Align Decimal Points?

Aligning decimal points keeps ones under ones, tenths under tenths and so on.

Example: $6.4 + 2.75$ becomes $6.40 + 2.75$.

Misaligned digits change place value and create an incorrect answer.



Adding Decimals

1. Estimate the total.
2. Write numbers vertically and align decimal points.
3. Add placeholder zeros when needed, then add from right to left.
4. Bring the decimal point straight down and compare with your estimate.



Addition Example

$$34.786 + 5.92 = 34.786 + 5.920$$

Exact answer: 40.706

Estimate: $35 + 6 = 41$, so 40.7 is reasonable.

Inverse check: $40.706 - 5.920 = 34.786$.



Subtracting Decimals

1. Estimate the difference.
2. Align decimal points and add placeholder zeros.
3. Subtract from right to left, borrowing when needed.
4. Bring the decimal point straight down and check with addition.



Subtraction Example

$$75.005 - 6.47 = 75.005 - 6.470$$

Exact answer: 68.535

Estimate: $75 - 6 = 69$, so 68.5 is reasonable.

Inverse check: $68.535 + 6.470 = 75.005$.



Regrouping Across Zeros

$$50.000 - 7.384 = 42.616$$

Regroup from the highest available place, then exchange across each zero.

Record every exchanged value carefully before subtracting.

$$\text{Check: } 42.616 + 7.384 = 50.000.$$



Adding More Than Two Decimals

Stack every addend in the same place value columns.

$$8.30 + 42.73 + 0.07 = 51.10$$

Add one column at a time and regroup once per column.

$$\text{Estimate: } 8 + 43 + 0 = 51$$



Rounding for Estimate

Choose the place you are rounding to, then inspect the digit to its right.

0–4: keep the rounding digit. 5–9: increase it by one.

Example: 64.2056 rounded to the nearest hundredth is 64.21.

Use the same rounding consistently across both numbers.



Estimate, Solve and Check

ESTIMATE — predict a sensible range before calculating.

SOLVE — align place values and calculate precisely.

CHECK — compare with the estimate and use the inverse operation.

If the checks disagree, recheck alignment and regrouping first.



Money and Measurement

Keep units with the answer: dollar, kilometre, metres, grams or seconds.

Money is normally written to two decimal places: \$8.90, not \$8.9.

Translate context words into a calculation then check whether the result makes sense.



Decimal Error Detective

Claim: $5.8 + 3.47 = 8.127$

The decimal points were misaligned.

Correct alignment: $5.80 + 3.47 = 9.27$

A quick estimate, $6 + 3$, also exposes the incorrect claim.



Independent Practice

A. $8.45 + 2.7$

B. $31.08 - 4.9$

C. $42.72 - 19.908$

D. Estimate $901.463 - 48.2$ by rounding to whole numbers.



Challenge

Find the missing addend: $12.4 + \square = 20.05$

Explain how subtraction can help you find the missing number.

Then use addition to prove your result.



Reflection and Exit Ticket

What is one reason decimal points must align?

Which check gives you the strongest evidence that an answer is correct?

Solve: $7.350 + 2.650$. Explain what the trailing zeros show.



Question 1

$$8.15 + 2.7 = ?$$



Answer 1

$$5.45 + 2.70 = 11.15$$



Question 2

$$31.08 - 4.9 = ?$$



Answer 2

$$1.08 - 4.90 = 26.18$$



Question 3

$$9.009 + 0.991 = ?$$



Answer 3

$$0.09 \cdot 0.991 = 10.000$$



Question 11

$$42.72 - 19.908 = ?$$



Answer u

$$42 - 20 - 19.908 = 22.812$$



Question 5

Which is 64.2056 rounded to the nearest hundredth?

A. 64.20 B. 64.21

C. 64.205 D. 64.3



Answer 5

B. 64.21



Question 6

Estimate $901.463 - 49.62$ by rounding each number to the nearest whole.



Answer 6

$$901 - 50 = 851$$



Question 7

Mia has \$20.00. She spends \$6.35 and \$4.75. How much change does she receive?



Answer 7

$$\$20.00 - \$1.35 - \$4.75 = \$8.90$$



Question 8

Find the missing addend: $12.4 + \square = 20.05$



Answer 8

7.65, because $20.05 - 12.4 = 7.65$



Question 1

True or false: $5.8 + 3.47 = 9.127$ because the decimal points are aligned.



Answer a

False. The decimal points were misaligned. $5.80 + 3.47 = 9.27$.



Question 10

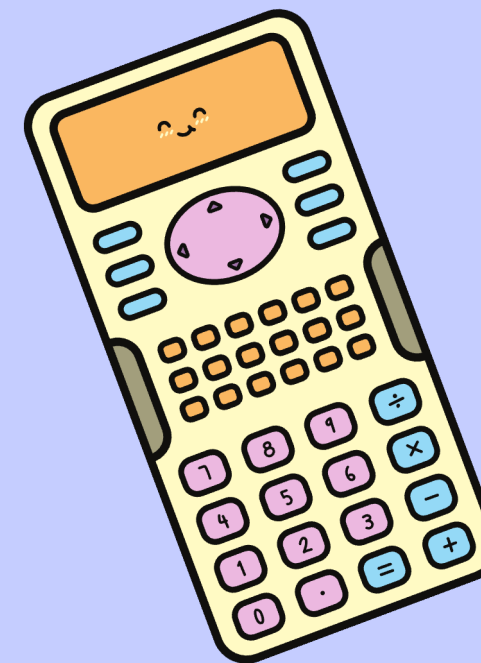
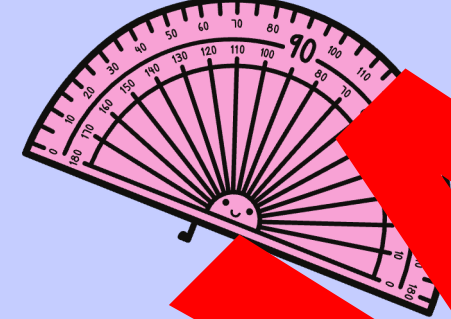
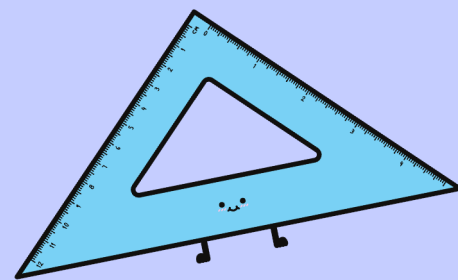
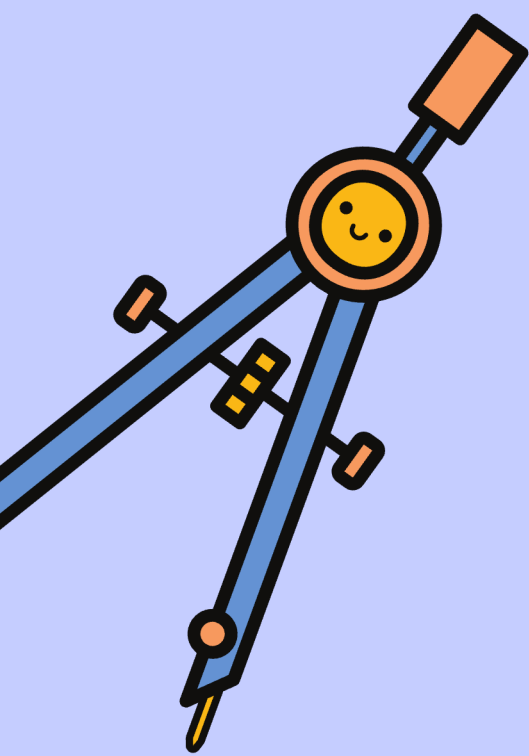
A tank holds 24.5 L of water. 3.875 L is used, how much remains?



Answer 10

$$20.5 - 2.875 = 17.625 \text{ L}$$





Well Done!

