Unit 2 · Operations of Fractions and Decimals Cheat Sheet

Unit 2 focus: dividing fractions and mixed numbers

1 KEY VOCABULARY

reciprocal	Flip a fraction; the product is 1.	$\frac{3}{5}$ and $\frac{5}{3}$
quotient	The answer to a division.	12 ÷ 4 = 3
mixed number	A whole number and a fraction.	$2\frac{1}{3}$
dividend / divisor	In a ÷ b, a is the dividend, b the divisor.	36 ÷ 4
improper fraction	Numerator greater than or equal to the denominator.	$\frac{7}{3}$

2 DIVIDING FRACTIONS

Keep the first fraction, change ÷ to ×, flip the second.

Example: $\frac{3}{4} \div \frac{2}{5}$
Flip and multiply: $\frac{3}{4} \times \frac{5}{2} = \frac{15}{8}$
Answer: $\frac{15}{8} = 1\frac{7}{8}$

3 WHOLE NUMBERS AND FRACTIONS

Write the whole number over 1 first.

Example: $6 \div \frac{3}{4}$
Rewrite: $\frac{6}{1} \times \frac{4}{3} = \frac{24}{3}$
Answer: 8

4 MIXED NUMBERS

Change mixed numbers to improper fractions before dividing.

Example: $2\frac{1}{2} \div 1\frac{1}{4}$
Improper: $\frac{5}{2} \div \frac{5}{4}$
Flip: $\frac{5}{2} \times \frac{4}{5} = 2$
Answer: 2

5 LONG DIVISION

Divide, multiply, subtract, bring down. Repeat.

Example: 1,428 ÷ 12
12 into 14: 1 R 2, bring down 2 → 22
Continue: 22 → 1 R 10, 108 → 9
Answer: 119

6 QUICK REMINDERS & COMMON MISTAKES

✔ Do remember

- Only flip the SECOND fraction.
- Dividing by a fraction less than 1 makes the answer bigger.
- Simplify before multiplying when you can.

✘ Common mistakes

- Flipping the first fraction: keep, change, flip the second
- Dividing mixed numbers part by part: convert to improper first
- Forgetting to simplify: $\frac{8}{12} = \frac{2}{3}$

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More practice: multi-digit decimals, GCF, LCM and the distributive property

1 ADDING AND SUBTRACTING DECIMALS

Line up the decimal points; add zeros as placeholders.

Example: 23.5 − 7.28
Line up: 23.50 − 7.28
Answer: 16.22

2 MULTIPLYING DECIMALS

Multiply as whole numbers, then count the decimal places in both factors.

Example: 3.4 × 0.25
Whole numbers: 34 × 25 = 850
3 decimal places: 0.850
Answer: 0.85

3 DIVIDING DECIMALS

Move the decimal in the divisor to make it whole; move the dividend the same number of places.

Example: 7.56 ÷ 0.6
Shift one place: 75.6 ÷ 6
Answer: 12.6

4 GCF AND LCM

Find	Example: 12 and 18
Factors of each	12: 1, 2, 3, 4, 6, 12 · 18: 1, 2, 3, 6, 9, 18
GCF (greatest common factor)	6
Multiples	12, 24, 36 … · 18, 36 …
LCM (least common multiple)	36

GCF: sharing equally. LCM: when things line up again.

5 THE DISTRIBUTIVE PROPERTY

Use the GCF to factor a sum: $a \cdot b + a \cdot c = a(b + c)$.

Example: Write 24 + 36 as a product using the GCF.
GCF of 24 and 36: 12
Factor: 12(2 + 3)
Answer: 12(2 + 3)

6 CHECK YOURSELF

- Did I flip only the divisor?
- Did I line up the decimal points?
- Does my decimal answer have the right number of places?
- Is my GCF a factor of BOTH numbers?