Fraction Operations Review thin slicing

opener A) $\frac{1}{20}$ B) $\frac{20}{25}$ C) $\frac{2}{3}$ D) $\frac{5}{4}$

LAUNCH NO EXPLANATION NEEDED *(source: Increasingly Difficult Questions)*

A. $\frac{1}{6} + \frac{1}{6}$	G. $\frac{2}{3} + \frac{1}{4} - \frac{11}{12}$
B. $\frac{7}{10} - \frac{3}{10}$	H. $1\frac{1}{8} + 2\frac{3}{4}$
C. $\frac{1}{2} + \frac{1}{4}$	I. $3\frac{2}{5} - 2\frac{2}{10}$
D. $\frac{7}{10} - \frac{2}{5}$	J. $2\frac{14}{15} + 3\frac{3}{8}$
E. $\frac{3}{4} + \frac{5}{6}$	K. $6\frac{2}{3} - 3\frac{4}{10}$
F. $\frac{11}{12} - \frac{7}{9}$	L. $3\frac{5}{6} - 2\frac{1}{2} + 1\frac{7}{9}$

WHAT DO YOU NOTICE IS THE SAME? DIFFERENT? *adapted from Increasingly Difficult Questions above*

A. $\frac{1}{6} \times \frac{1}{6}$	H. $\frac{1}{6} \div \frac{6}{1}$
B. $\frac{7}{10} \times \frac{3}{10}$	I. $\frac{7}{10} \div \frac{3}{10}$
C. $\frac{1}{2} \times \frac{1}{4}$	J. $1\frac{1}{8} \div 2\frac{3}{4}$
D. $\frac{7}{10} \times \frac{2}{5}$	K. $\frac{3}{7} \times \frac{7}{3} + \frac{13}{17}$
E. $\frac{3}{4} \bullet \frac{5}{6}$	L. $6\frac{2}{3} - 3\frac{11}{3}$
F. $\frac{6}{9} \bullet \frac{1}{6}$	M. $\frac{4}{11} \div \frac{36}{99}$
G. $1\frac{1}{8} \bullet 2\frac{3}{4}$	

Keep thinking Option #1 Pipe Flow Fractions either [DESMOS](#) or [paper](#)

Keep thinking Option #2 source: Beast Academy   [Practice](#)   and [GCF/LCM](#) web

Keep thinking Option #3 [Yokahu](#)

Keep thinking Option #4 [Illustrative Mathematics Task](#)

Lucy has measuring cups of sizes 1 cup, $\frac{1}{2}$ cup, $\frac{1}{3}$ cup, and $\frac{1}{4}$ cup. She is trying to measure out $\frac{1}{6}$ of a cup of water and says, "If I fill up the $\frac{1}{2}$ cup and then pour that into the $\frac{1}{3}$ cup until it is full, there will be $\frac{1}{6}$ of a cup of water left."

A. Is Lucy's method to measure $\frac{1}{6}$ of a cup of water correct? Explain.

B. Lucy wonders what other amounts she can measure. Is it possible for her to measure out $\frac{1}{12}$ of a cup? Explain.

C. What other amounts of water can Lucy measure?

Extension Option #5   **adapted** from [Menu Math](#)

Fractions 1: Build as *few* fractions as possible to satisfy each constraint at least once.

A.	Is less than 1	B.	Has a prime denominator
C.	Has a denominator greater than 10	D.	Has a composite numerator
E.	Is fully simplified	F.	Is greater than $\frac{2}{3}$
G.	Can be rewritten as a terminating decimal	H.	Has a numerator greater than 20
I.	Has a numerator greater than its denominator	J.	Is equivalent to $\frac{1}{2}$

Which constraints pair nicely? Which constraints cannot be paired? Is it possible to solve in 2, 3, or 4 expressions? Describe how and why you built each fraction expression. Be sure to identify which fractions satisfy which constraints.

Fractions 2: Build as *few* **fraction expressions** as possible to satisfy each constraint at least once.

A.	Equivalent to $\frac{1}{4}$	B.	Is closer to 1 than $\frac{1}{2}$
C.	Has a denominator greater than 6	D.	Is less than $\frac{1}{2}$
E.	Is greater than $\frac{3}{4}$	F.	Has a numerator less than 4

Which constraints pair nicely? Which constraints cannot be paired? Is it possible to solve in 2, 3, or 4 expressions? Describe how and why you built each fraction expression. Be sure to identify which fractions satisfy which constraints.

LAUNCH NO EXPLANATION NEEDED

A. $\frac{1}{6} + \frac{1}{6} = \frac{1}{3}$

B. $\frac{7}{10} - \frac{3}{10} = \frac{2}{5}$

C. $\frac{1}{2} + \frac{1}{4} = \frac{3}{4}$

D. $\frac{7}{10} - \frac{2}{5} = \frac{3}{10}$

E. $\frac{3}{4} + \frac{5}{6} = \frac{38}{24} = \frac{19}{12} = 1\frac{7}{12}$

F. $\frac{11}{12} - \frac{7}{9} = \frac{5}{36}$

G. $\frac{2}{3} + \frac{1}{4} - \frac{11}{12} = 0$

H. $1\frac{1}{8} + 2\frac{3}{4} = 3\frac{7}{8}$

I. $3\frac{2}{5} - 2\frac{2}{10} = 1\frac{1}{5}$

J. $2\frac{14}{15} + 3\frac{3}{8} = 6\frac{37}{120}$

K. $6\frac{2}{3} - 3\frac{4}{10} = 3\frac{8}{30} = 3\frac{4}{15}$

L. $3\frac{5}{6} - 2\frac{1}{2} + 1\frac{7}{9} = 3\frac{1}{9}$

WHAT DO YOU NOTICE IS THE SAME? DIFFERENT?

A. $\frac{1}{6} \times \frac{1}{6} = \frac{1}{36}$

B. $\frac{7}{10} \times \frac{3}{10} = \frac{21}{100}$

C. $\frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$

D. $\frac{7}{10} \times \frac{2}{5} = \frac{14}{50} = \frac{7}{25}$

E. $\frac{3}{4} \bullet \frac{5}{6} = \frac{15}{24} = \frac{5}{8}$

F. $\frac{6}{9} \bullet \frac{1}{6} = \frac{1}{9}$

G. $1\frac{1}{8} \bullet 2\frac{3}{4} = \frac{9}{8} \bullet \frac{11}{4} = \frac{99}{32} = 3\frac{3}{32}$

H. $\frac{1}{6} \div \frac{6}{1} = \frac{1}{36}$

I. $\frac{7}{10} \div \frac{3}{10} = \frac{7}{3}$

J. $1\frac{1}{8} \div 2\frac{3}{4} = \frac{9}{8} \bullet \frac{4}{11} = \frac{9}{22}$

K. $\frac{3}{7} \times \frac{7}{3} + \frac{13}{17} = 1\frac{13}{17}$

L. $6\frac{2}{3} - 3\frac{11}{3} = 0$

M. $\frac{4}{11} \div \frac{36}{99} = 1$