Make It Proper

Carole Greenes

Tanner Wolfram

$1\frac{1}{4}$

I'm Proper!

I'm Improper

Also produced by the Prime Group

Alge-Grid: What's the a?

Pattern Grid-unLocks

Play It Positively or Negatively!

Factor Max

Make It Proper

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https://mathandteaching.org/

Author Bios

Carole Greenes, Ed.D. is Professor Emerita, Mathematics Education at Arizona State University. While at ASU, she served as Associate Vice President for STEM Education, Dean of the School of Educational Innovation and Teacher Preparation, Director of the Practice Research and Innovation in Mathematics Education (PRIME) Center, Director of the Vertically Integrated Projects program that provides research experiences for undergraduate students, and Professor of Mathematics Education in the Ira A. Fulton Schools of Engineering, the College of Liberal Arts and Sciences, and the Mary Lou Fulton Teachers College. Currently, she directs the PRIME Group that develops books of challenge problems and games for students, grades K – 12, and authors Carole's Corner for the Center for Mathematics and Teaching, Inc. in California. Carole is author of more than 350 books for students, PreK-12 and college, and teachers; 81 articles; six mathematical musicals; and two histories of mathematics in story and song. She served as editor of the Arizona Association of Teachers of Mathematics journal, *OnCore*, and author of the online monthly free *MATHgazine Senior* (grades 8-12), *MATHgazine Junior* (grades 5-8), *MATHgazine Elementary* (grades 3-5) and *MATHgazine Primary* (grades K-2). In 2003, Greenes was inducted into the Massachusetts Mathematics Educators' Hall of Fame. In 2011, she received the NCSM Ross Taylor/Glenn Gilbert National Leadership Award in Mathematics Education. In 2016, she received the Copper Apple Award for Leadership in Mathematics in Arizona, and in 2018 she received the National Council of Teachers of Mathematics Lifetime Achievement Award. Her 2021 and 2022 books/games include: *Alge-Grid: What'the a?*, *Pattern Grid-unLocks*, *Play It Positively or Negatively?*, *Factor Max!*, and *Make It Proper.*

Tanner Wolfram is a Fall 2019 graduate, Summa cum Laude, of Barrett, The Honors College at Arizona State University. He holds a major in Physics and minors in both Spanish and Chinese. Tanner is co-author of *Make It Proper, Solve It Positively and Negatively!*, *Pattern Grid-unLocks, Factor Max, Alge-Grid: What's the a?* puzzle books distributed by the Center for Mathematics and Teaching, and senior author of the *Facasumi Puzzle Book* for the Arizona Association of Teachers of Mathematics. From Spring 2016 to Fall 2020, Tanner served as Senior Project Assistant in the Practice, Research, and Innovation in Mathematics Education (PRIME) Center at ASU, and is now co-Director of the PRIME Group. During his time with the PRIME Center, Tanner assisted with the NSF-funded App Maker Pro (AMP) project, contributed to and edited eight *MATHadazzle Puzzle Books*, co-authored six articles, and co-edited two free monthly online *MATHgazines.* He also co-edited the Fall and Spring (2019, 2020) issues of *OnCore*, the journal of the Arizona Association of Teachers of Mathematics (AATM).

Table of Contents

Make It Proper

Goal: Use spatial clues to identify positions of numbers, and then use computations to complete Improper and Proper Fraction Grids.

Talents Developed:

- Critical Thinking: Consider and identify multiple solutions, test them, and revise when necessary.
- Spatial Reasoning: Solve problems that involve interpreting information about position/location.
- Computational Expertise: Convert improper fractions to proper fractions. Simplify fractions.

Components

Each puzzle contains:

- A unique set of 9 improper fractions.
- Clues showing locations of improper fractions in a 3-by-3 grid.
- 2 Grids with 9 cells in each: Improper Number Grid and Proper Number Grid

Clues:

These are arrangements of connected cells that show portions of the completed Improper Number Grid, as for example, a completed row, a diagonal, or a different set of connected cells. For each problem, there may be 3 or 4 clues. Clues cannot be rotated or flipped.

Some clues contain blue cells. Those are cells that overlap on the grid. Their values must be deduced from what is already in place or is a number that has not been used.

Number of Puzzles:

There are 40 puzzles. Section I contains 28 puzzles. Each puzzle includes fractions with denominators that are the same. Section II contains 12 puzzles with denominators that differ.

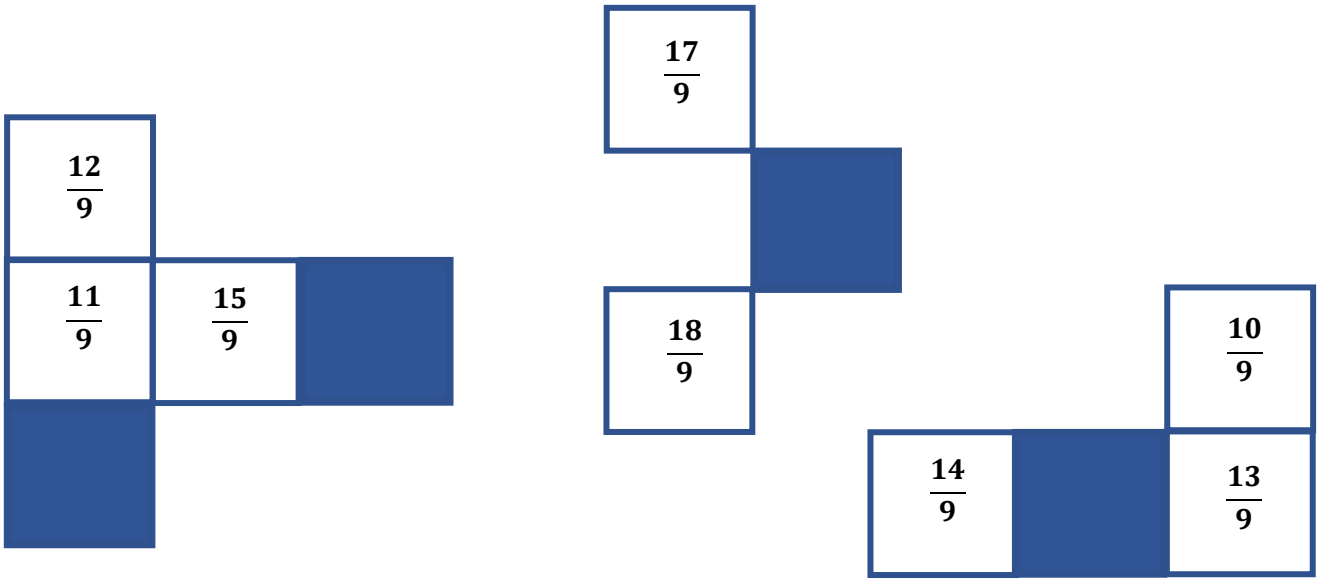
Within each section, problems vary by difficulty. Difficulty is determined by the nature of the clues and their locations on the grid. For example, a diagonal clue has only one location on a grid. By contrast, a 3-cell vertical clue has three possible locations. In some cases, blue cells increase the difficulty. Clues must be considered together.

Solutions are presented in the last section of this book.

Section 1
Same Denominators

Make It Proper 1

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{10}{9}, \frac{11}{9}, \frac{12}{9}, \frac{13}{9}, \frac{14}{9}, \frac{15}{9}, \frac{16}{9}, \frac{17}{9}, \frac{18}{9}$$

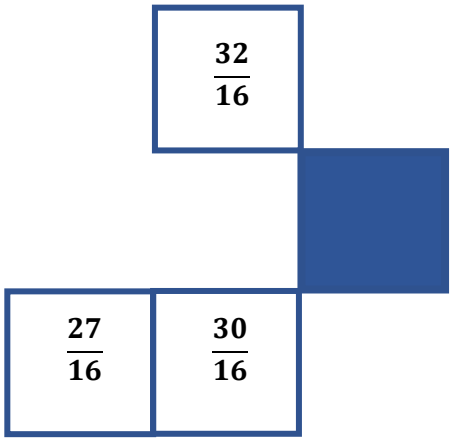
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

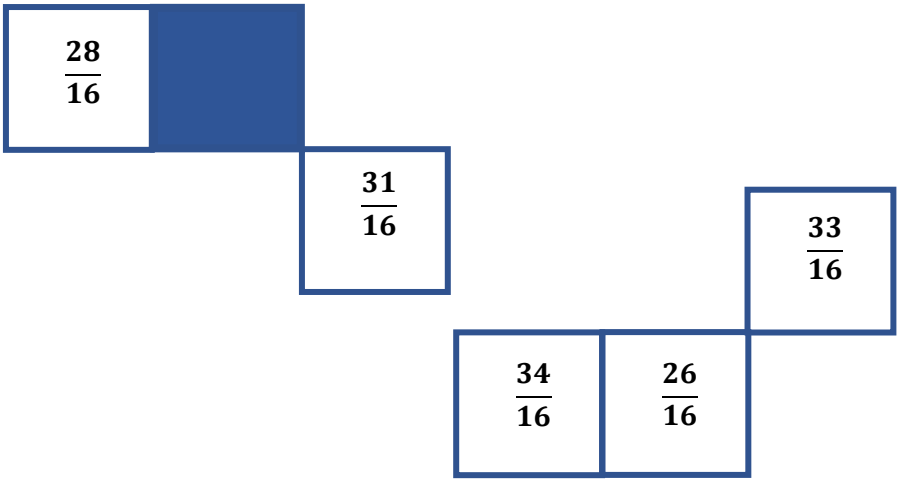
Improper Number Grid

Proper Number Grid

Make It Proper 2

Clues





Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{26}{16}, \frac{27}{16}, \frac{28}{16}, \frac{29}{16}, \frac{30}{16}, \frac{31}{16}, \frac{32}{16}, \frac{33}{16}, \frac{34}{16}$$

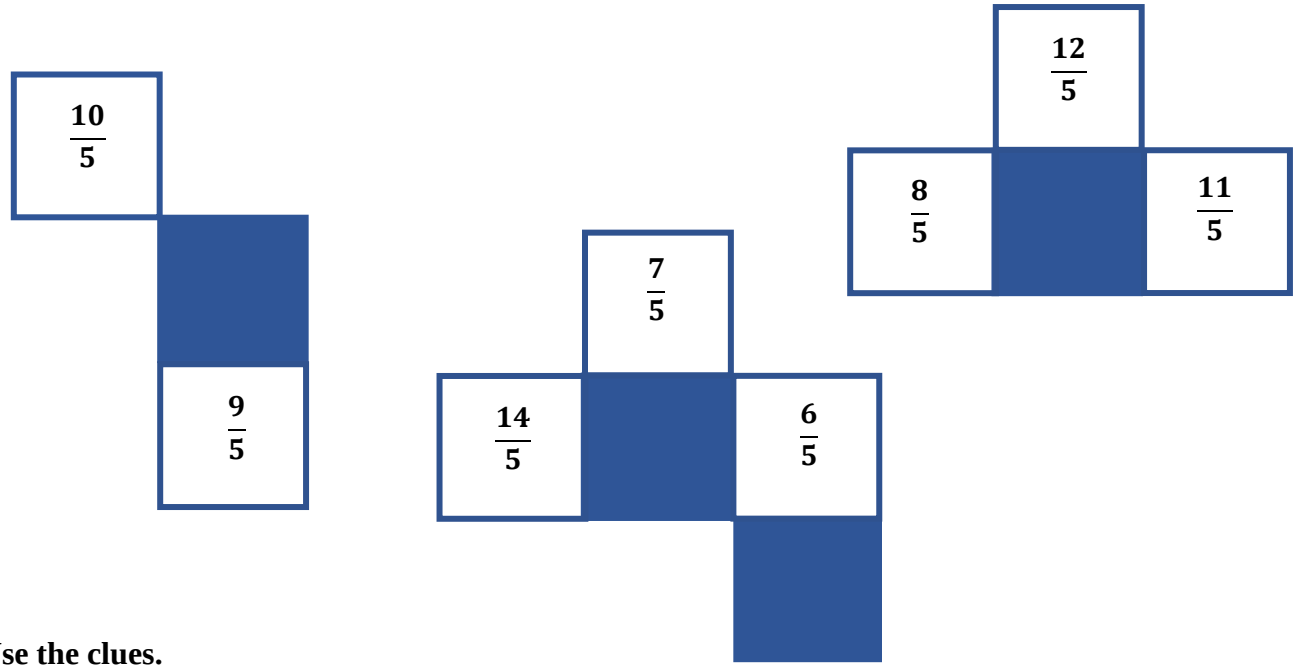
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 3

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{6}{5}, \frac{7}{5}, \frac{8}{5}, \frac{9}{5}, \frac{10}{5}, \frac{11}{5}, \frac{12}{5}, \frac{13}{5}, \frac{14}{5}$$

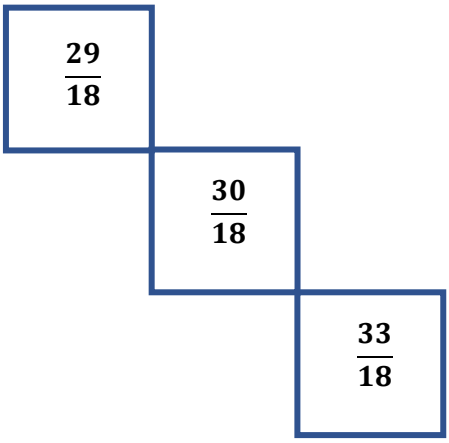
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

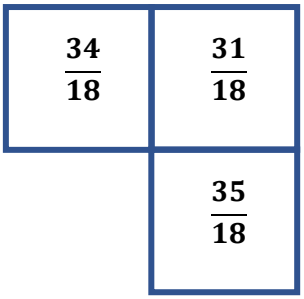
Improper Number Grid

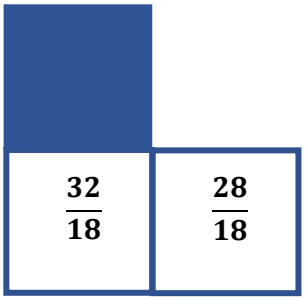
Proper Number Grid

Make It Proper 4

Clues







Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{28}{18}, \frac{29}{18}, \frac{30}{18}, \frac{31}{18}, \frac{32}{18}, \frac{33}{18}, \frac{34}{18}, \frac{35}{18}, \frac{36}{18}$$

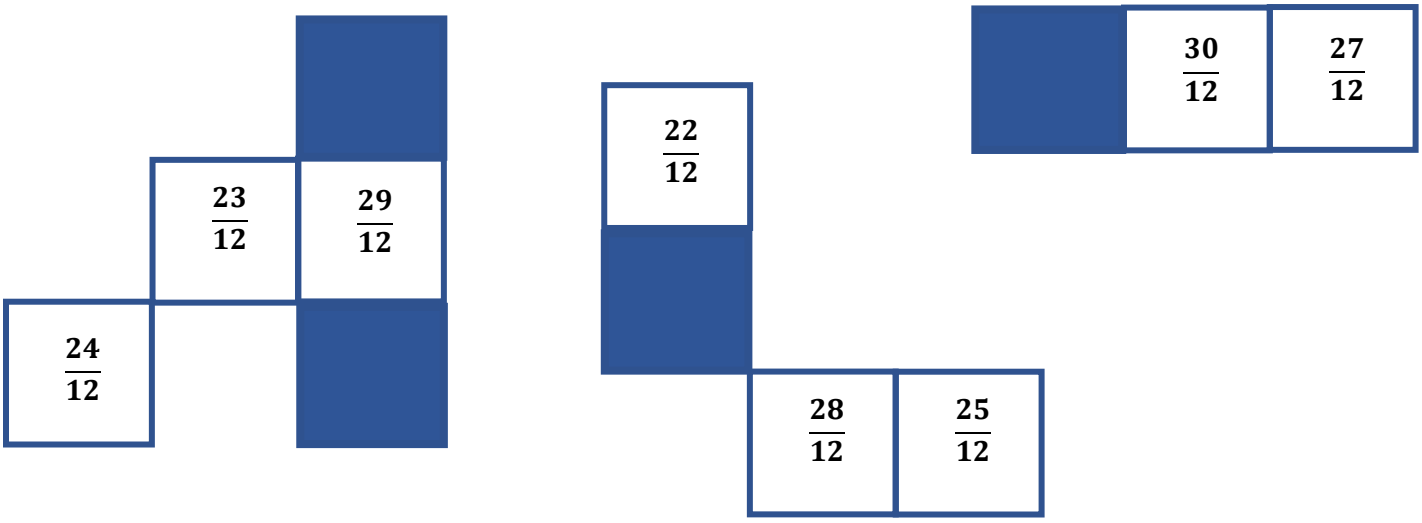
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 5

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{22}{12}, \frac{23}{12}, \frac{24}{12}, \frac{25}{12}, \frac{26}{12}, \frac{27}{12}, \frac{28}{12}, \frac{29}{12}, \frac{30}{12}$$

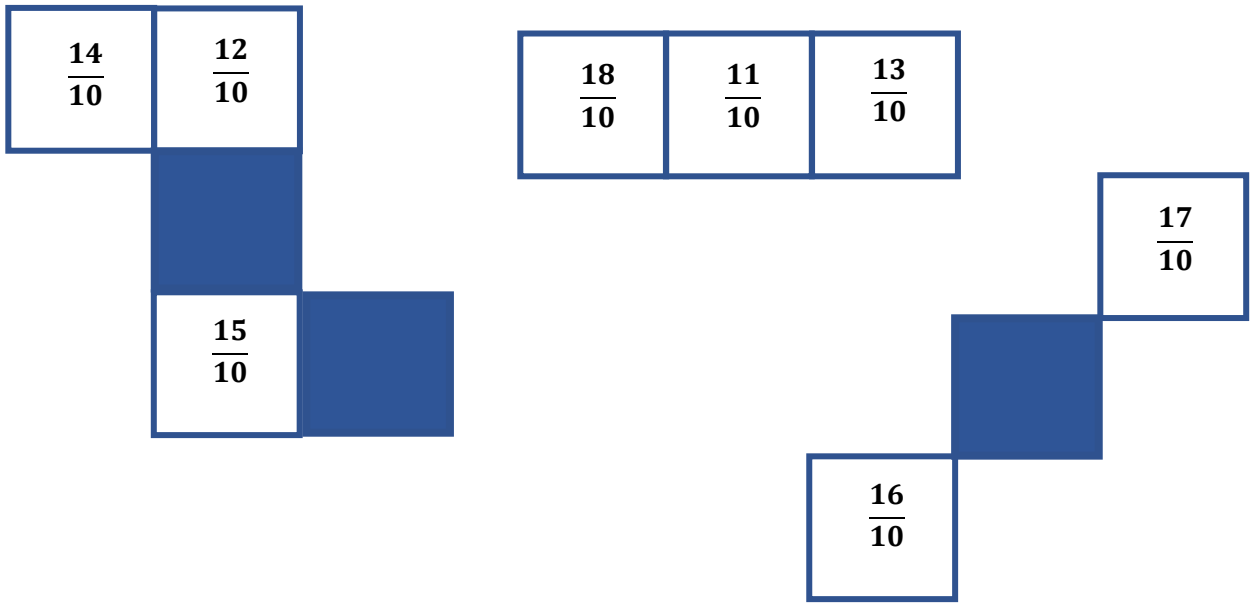
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 6

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{11}{10}, \frac{12}{10}, \frac{13}{10}, \frac{14}{10}, \frac{15}{10}, \frac{16}{10}, \frac{17}{10}, \frac{18}{10}, \frac{19}{10}$$

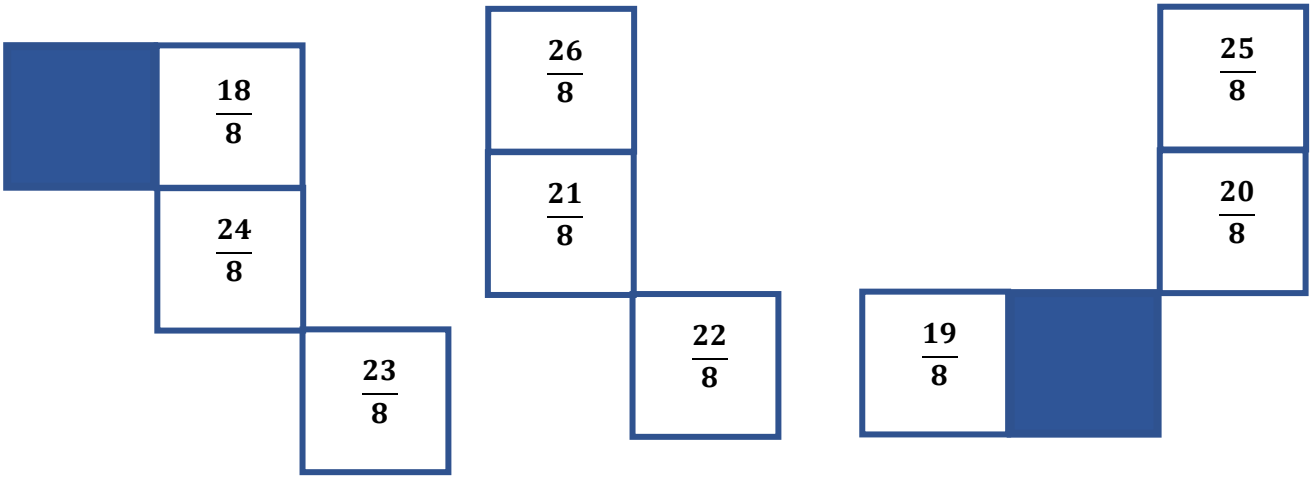
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 7

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{18}{8}, \frac{19}{8}, \frac{20}{8}, \frac{21}{8}, \frac{22}{8}, \frac{23}{8}, \frac{24}{8}, \frac{25}{8}, \frac{26}{8}$$

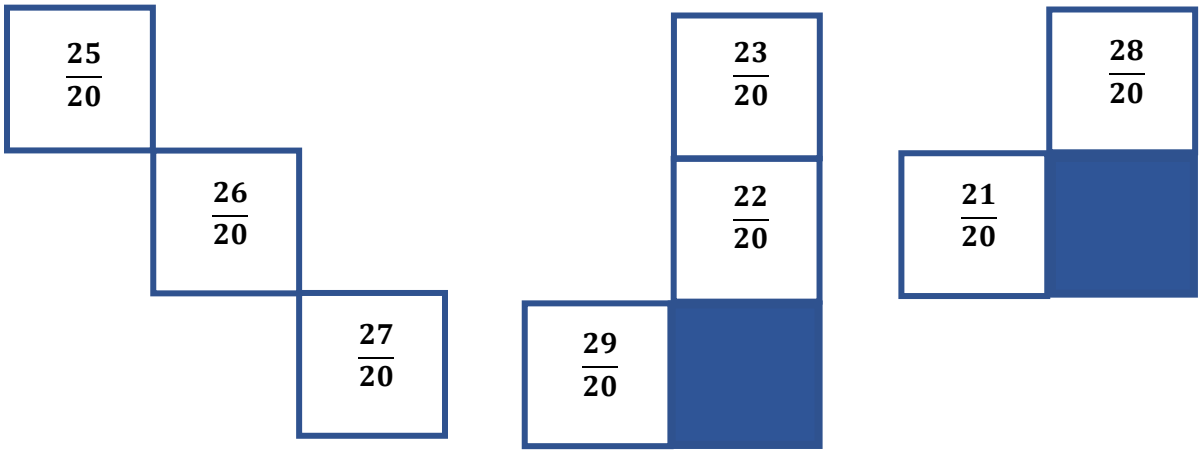
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 8

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{21}{20}, \frac{22}{20}, \frac{23}{20}, \frac{24}{20}, \frac{25}{20}, \frac{26}{20}, \frac{27}{20}, \frac{28}{20}, \frac{29}{20}$$

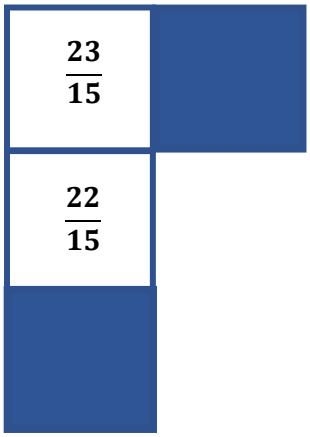
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

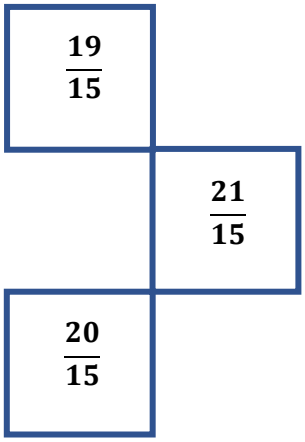
Improper Number Grid

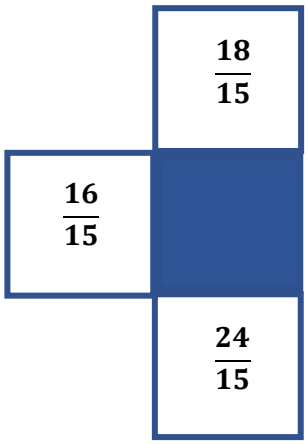
Proper Number Grid

Make It Proper 9

Clues







Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{16}{15}, \frac{17}{15}, \frac{18}{15}, \frac{19}{15}, \frac{20}{15}, \frac{21}{15}, \frac{22}{15}, \frac{23}{15}, \frac{24}{15}$$

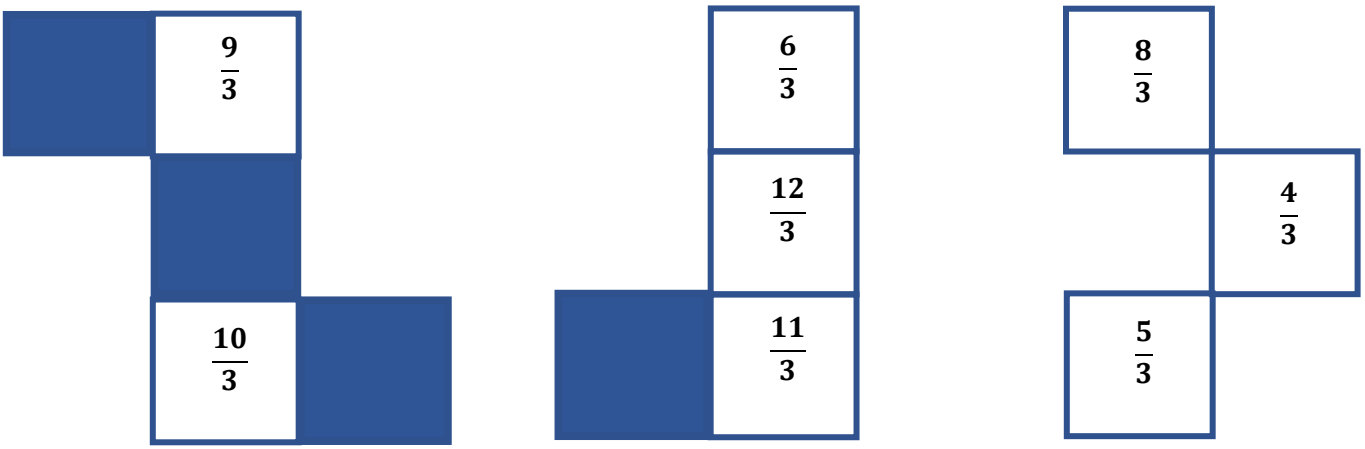
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 10

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{4}{3}, \frac{5}{3}, \frac{6}{3}, \frac{7}{3}, \frac{8}{3}, \frac{9}{3}, \frac{10}{3}, \frac{11}{3}, \frac{12}{3}$$

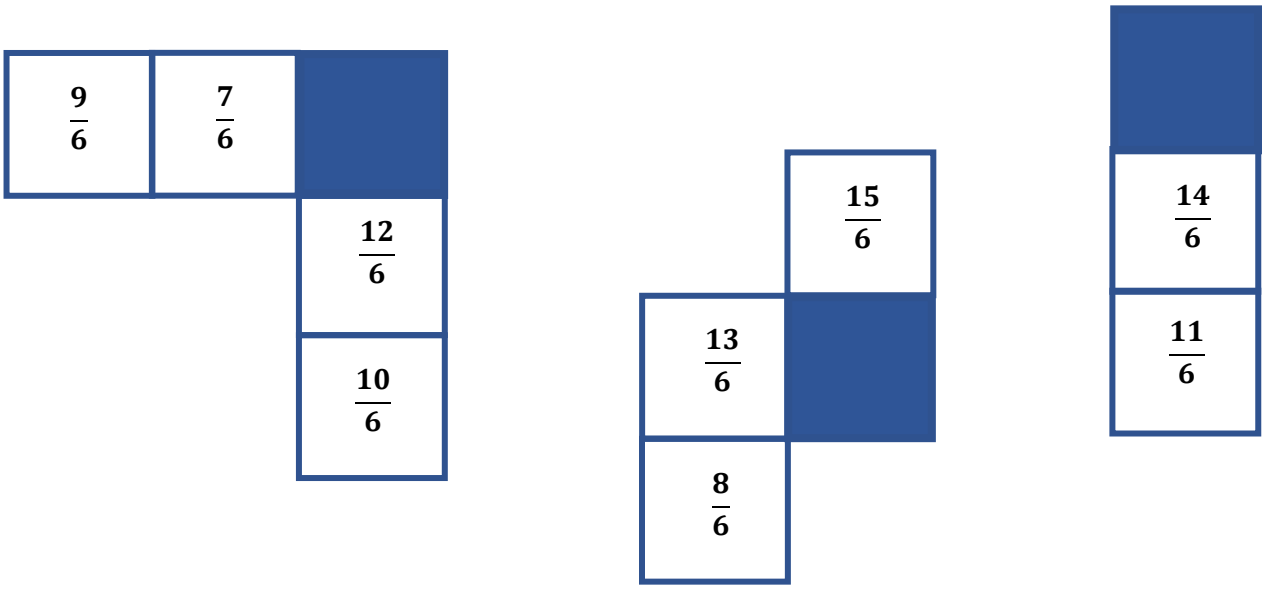
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 11

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{7}{6}, \frac{8}{6}, \frac{9}{6}, \frac{10}{6}, \frac{11}{6}, \frac{12}{6}, \frac{13}{6}, \frac{14}{6}, \frac{15}{6}$$

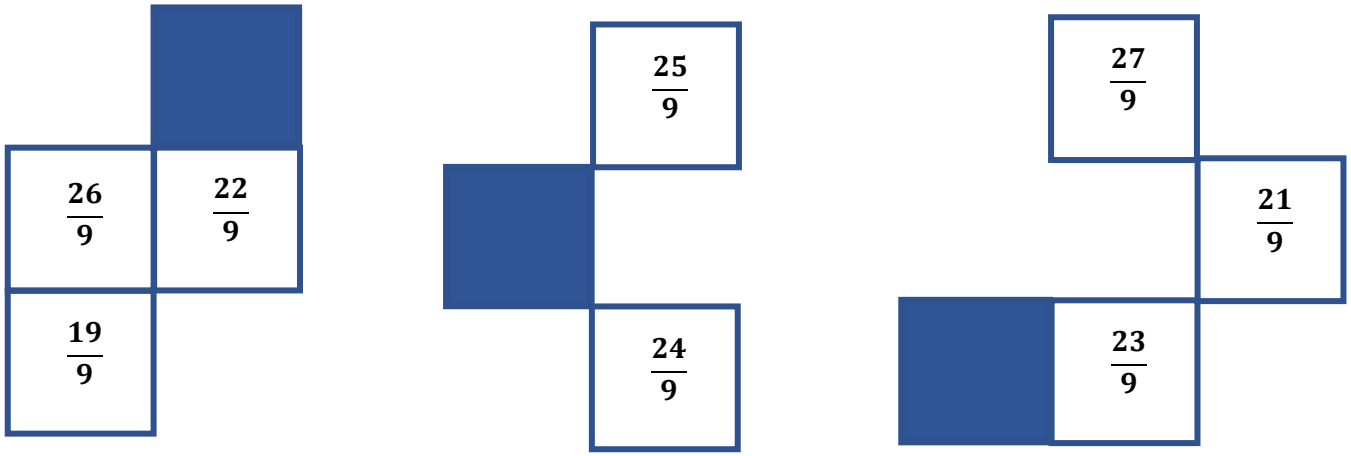
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 12

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{19}{9}, \frac{20}{9}, \frac{21}{9}, \frac{22}{9}, \frac{23}{9}, \frac{24}{9}, \frac{25}{9}, \frac{26}{9}, \frac{27}{9}$$

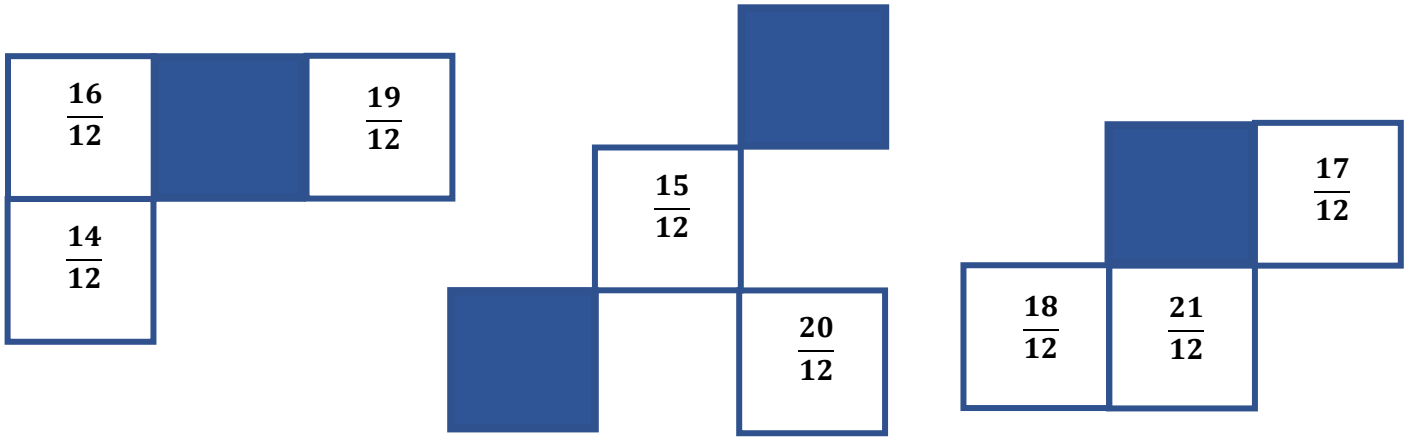
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 13

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{13}{12}, \frac{14}{12}, \frac{15}{12}, \frac{16}{12}, \frac{17}{12}, \frac{18}{12}, \frac{19}{12}, \frac{20}{12}, \frac{21}{12}$$

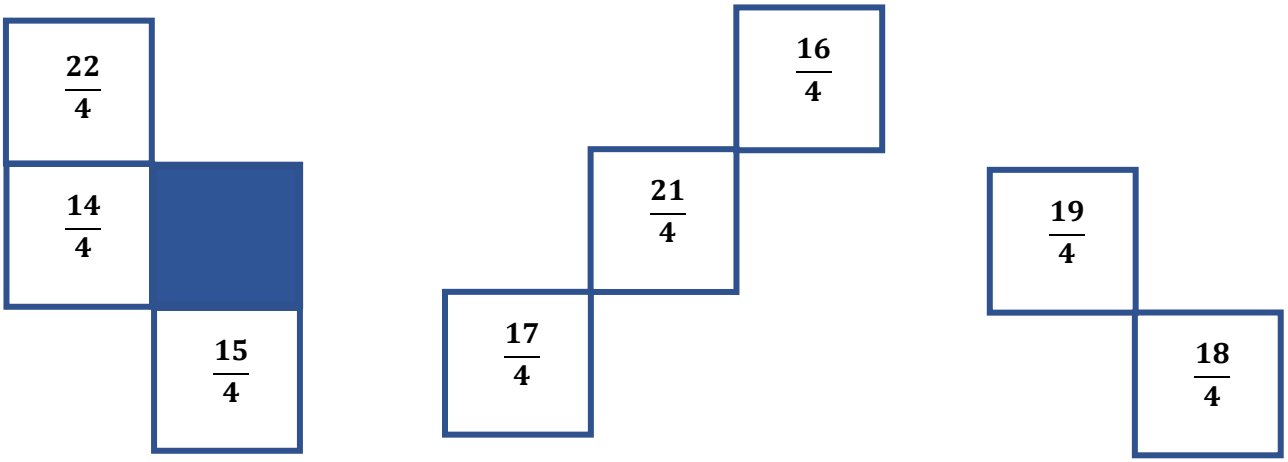
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 14

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{14}{4}, \frac{15}{4}, \frac{16}{4}, \frac{17}{4}, \frac{18}{4}, \frac{19}{4}, \frac{20}{4}, \frac{21}{4}, \frac{22}{4}$$

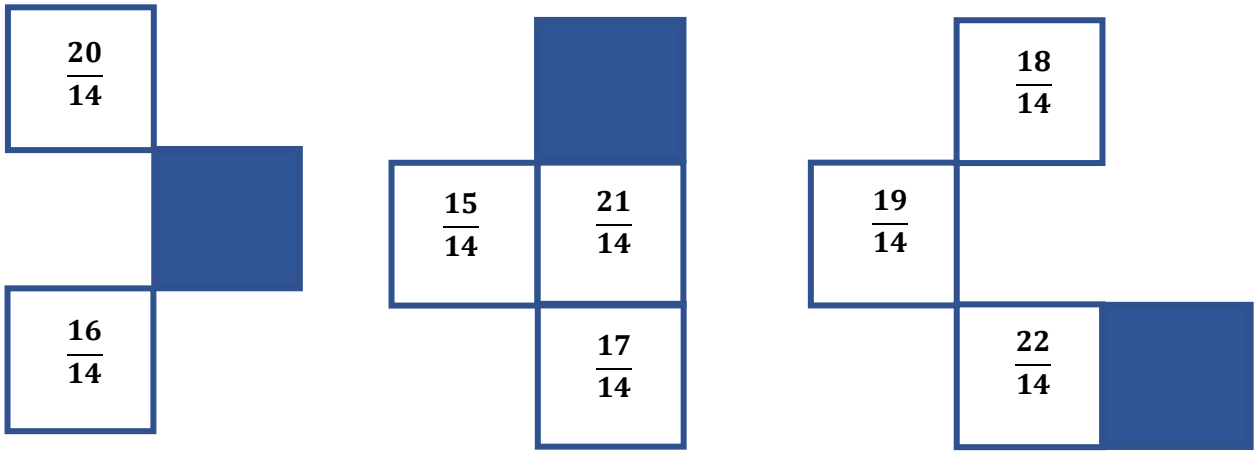
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 15

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{15}{14}, \frac{16}{14}, \frac{17}{14}, \frac{18}{14}, \frac{19}{14}, \frac{20}{14}, \frac{21}{14}, \frac{22}{14}, \frac{23}{14}$$

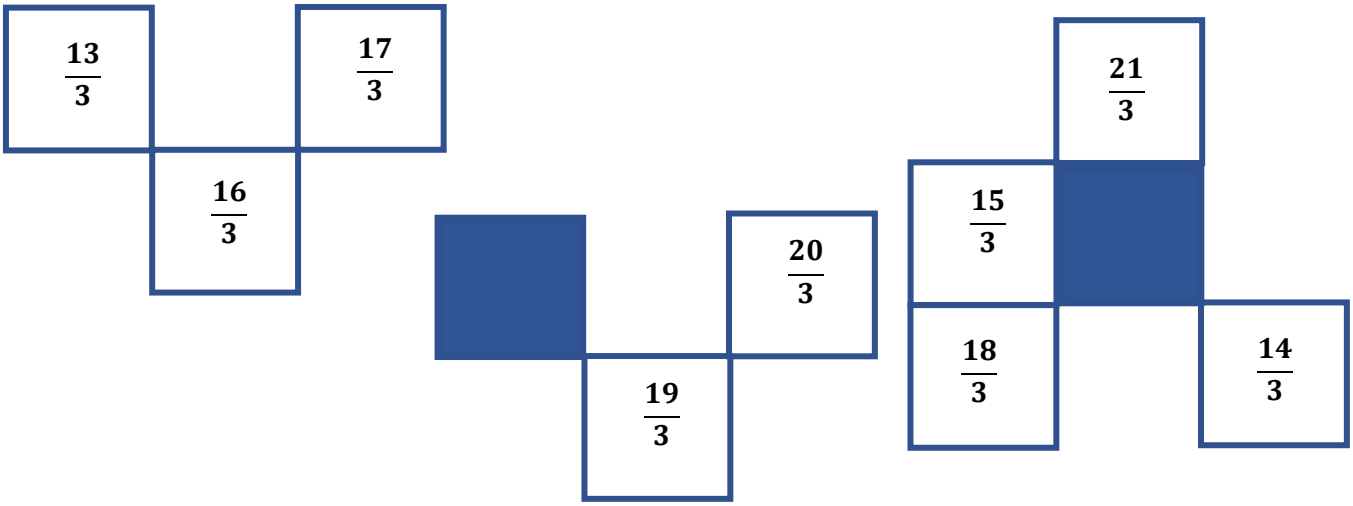
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 16

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{13}{3}, \frac{14}{3}, \frac{15}{3}, \frac{16}{3}, \frac{17}{3}, \frac{18}{3}, \frac{19}{3}, \frac{20}{3}, \frac{21}{3}$$

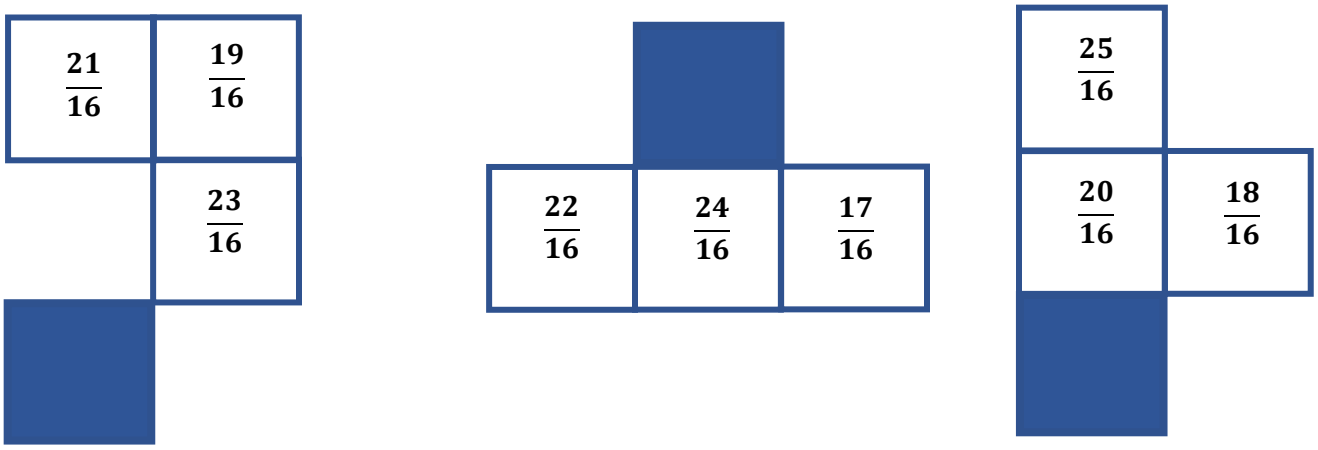
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 17

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{17}{16}, \frac{18}{16}, \frac{19}{16}, \frac{20}{16}, \frac{21}{16}, \frac{22}{16}, \frac{23}{16}, \frac{24}{16}, \frac{25}{16}$$

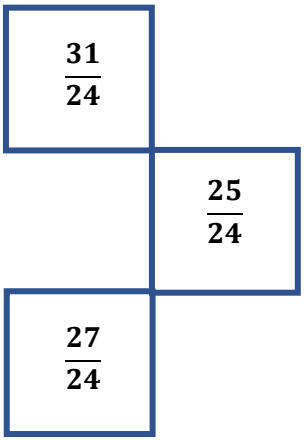
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

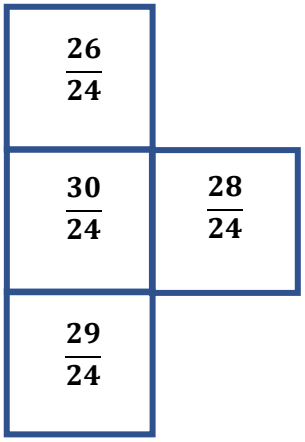
Improper Number Grid

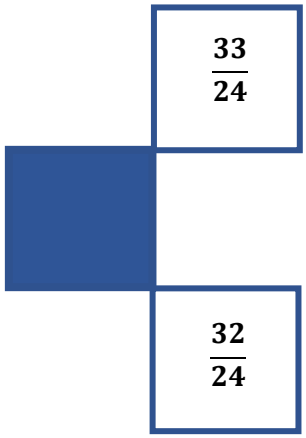
Proper Number Grid

Make It Proper 18

Clues







Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{25}{24}, \frac{26}{24}, \frac{27}{24}, \frac{28}{24}, \frac{29}{24}, \frac{30}{24}, \frac{31}{24}, \frac{32}{24}, \frac{33}{24}$$

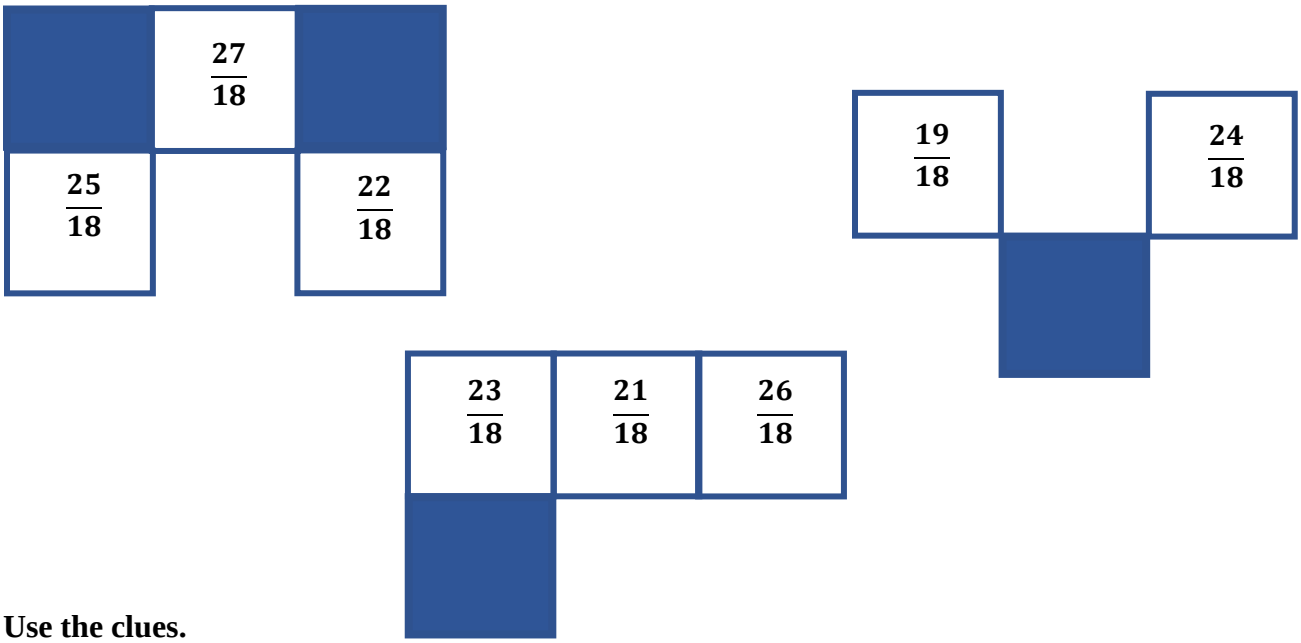
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 19

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{19}{18}, \frac{20}{18}, \frac{21}{18}, \frac{22}{18}, \frac{23}{18}, \frac{24}{18}, \frac{25}{18}, \frac{26}{18}, \frac{27}{18}$$

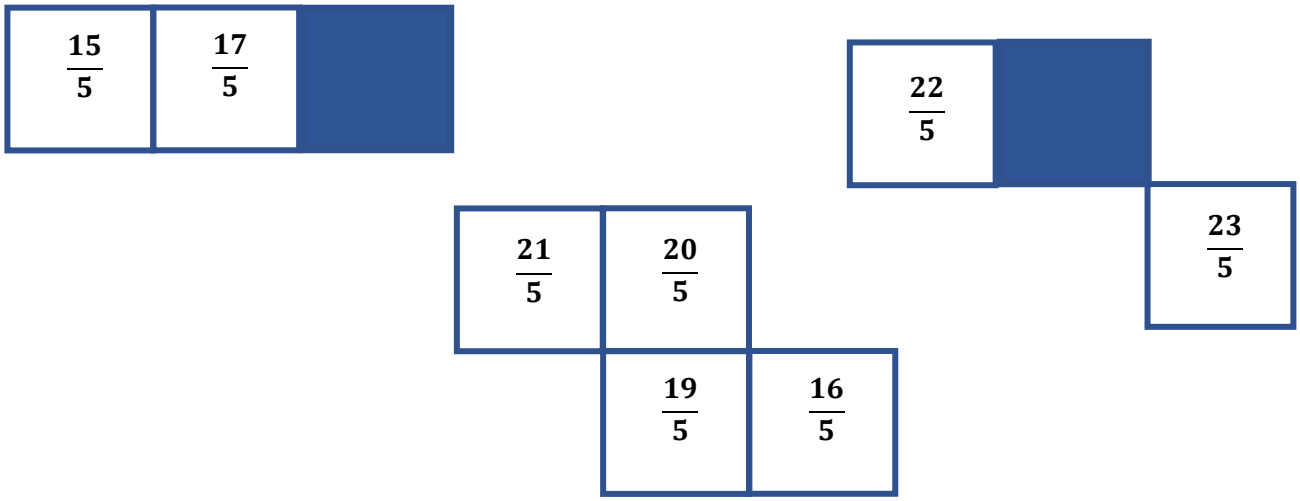
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 20

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{15}{5}, \frac{16}{5}, \frac{17}{5}, \frac{18}{5}, \frac{19}{5}, \frac{20}{5}, \frac{21}{5}, \frac{22}{5}, \frac{23}{5}$$

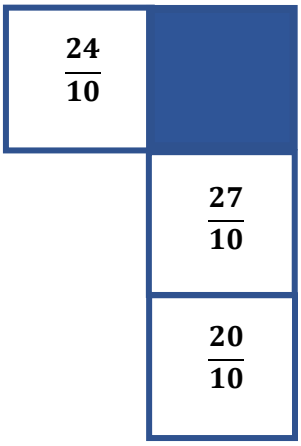
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

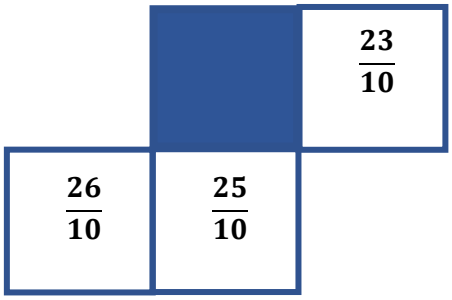
Improper Number Grid

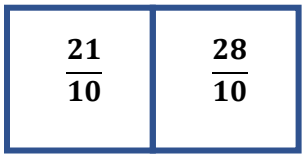
Proper Number Grid

Make It Proper 21

Clues







Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{20}{10}, \frac{21}{10}, \frac{22}{10}, \frac{23}{10}, \frac{24}{10}, \frac{25}{10}, \frac{26}{10}, \frac{27}{10}, \frac{28}{10}$$

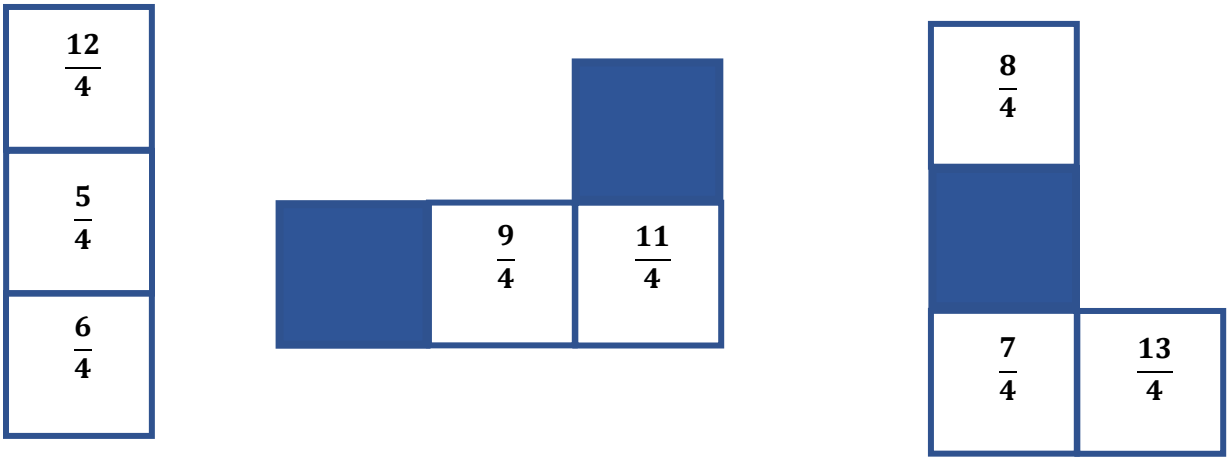
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 22

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{5}{4}, \frac{6}{4}, \frac{7}{4}, \frac{8}{4}, \frac{9}{4}, \frac{10}{4}, \frac{11}{4}, \frac{12}{4}, \frac{13}{4}$$

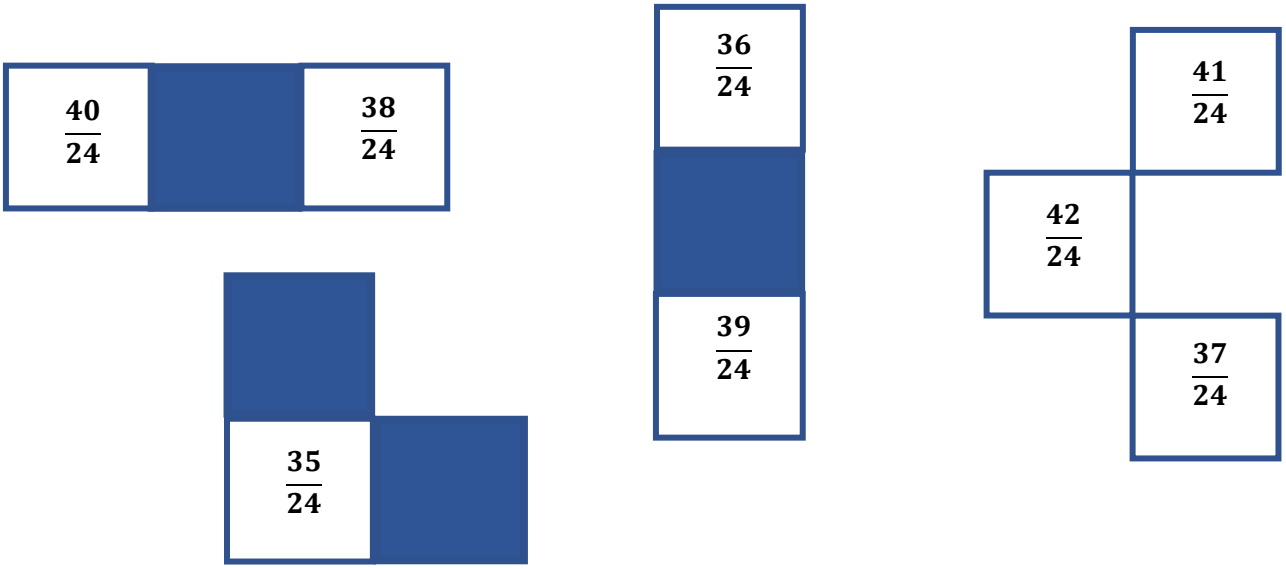
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 23

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{34}{24}, \frac{35}{24}, \frac{36}{24}, \frac{37}{24}, \frac{38}{24}, \frac{39}{24}, \frac{40}{24}, \frac{41}{24}, \frac{42}{24}$$

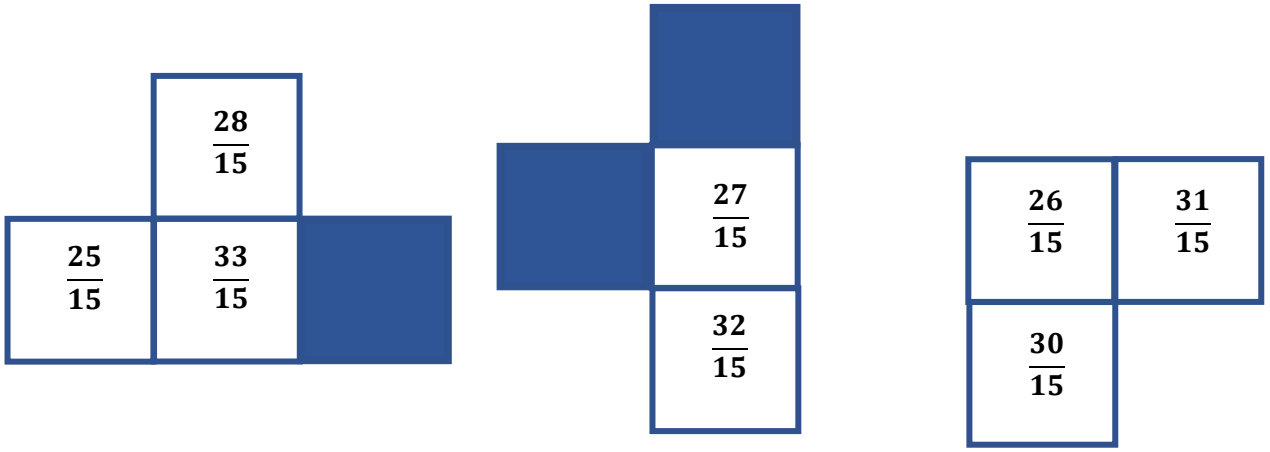
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 24

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{25}{15}, \frac{26}{15}, \frac{27}{15}, \frac{28}{15}, \frac{29}{15}, \frac{30}{15}, \frac{31}{15}, \frac{32}{15}, \frac{33}{15}$$

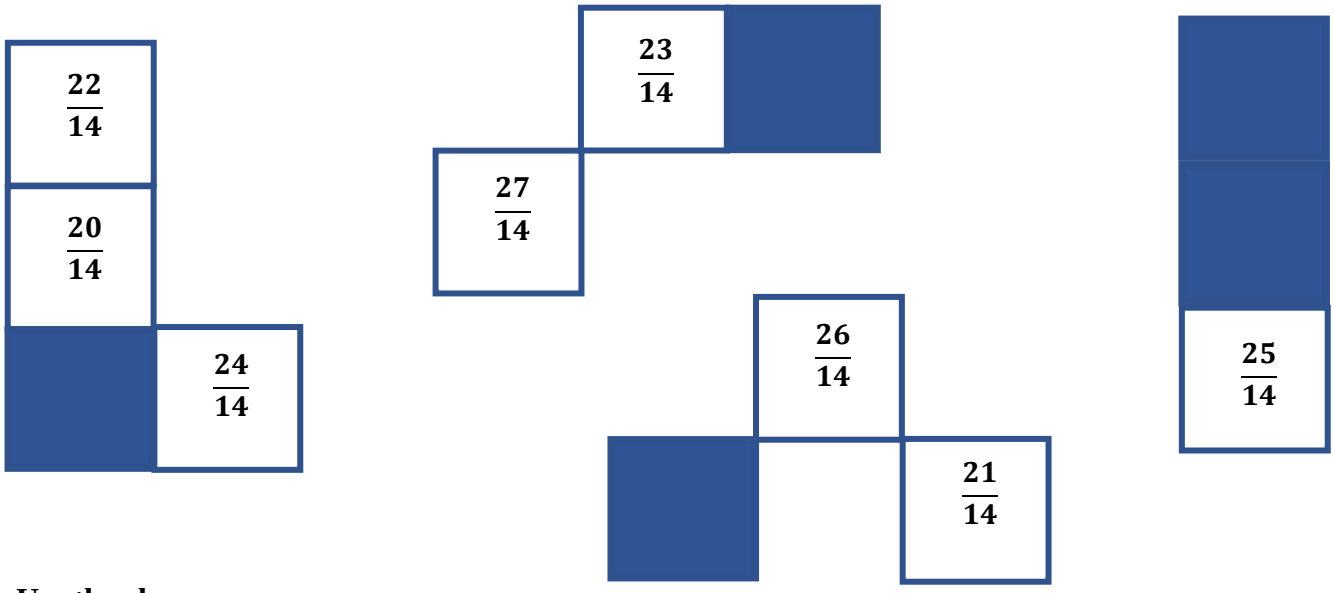
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 25

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{20}{14}, \frac{21}{14}, \frac{22}{14}, \frac{23}{14}, \frac{24}{14}, \frac{25}{14}, \frac{26}{14}, \frac{27}{14}, \frac{28}{14}$$

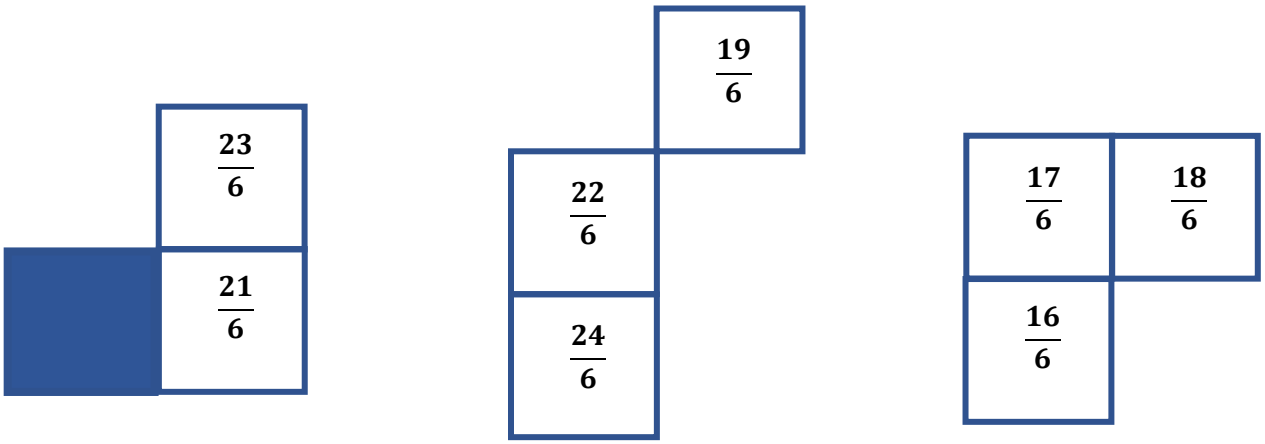
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 26

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{16}{6}, \frac{17}{6}, \frac{18}{6}, \frac{19}{6}, \frac{20}{6}, \frac{21}{6}, \frac{22}{6}, \frac{23}{6}, \frac{24}{6}$$

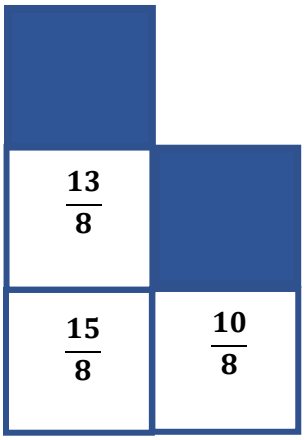
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

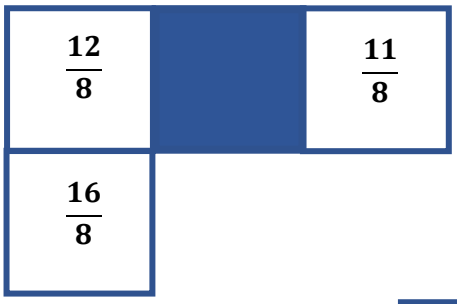
Improper Number Grid

Proper Number Grid

Make It Proper 27

Clues





Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{9}{8}, \frac{10}{8}, \frac{11}{8}, \frac{12}{8}, \frac{13}{8}, \frac{14}{8}, \frac{15}{8}, \frac{16}{8}, \frac{17}{8}$$

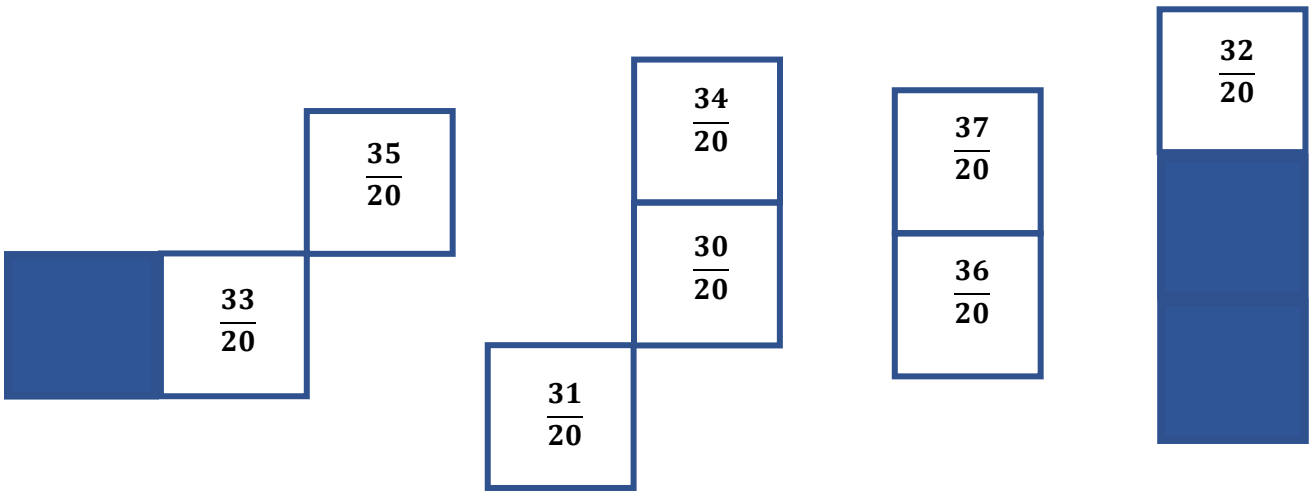
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 28

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{30}{20}, \frac{31}{20}, \frac{32}{20}, \frac{33}{20}, \frac{34}{20}, \frac{35}{20}, \frac{36}{20}, \frac{37}{20}, \frac{38}{20}$$

Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

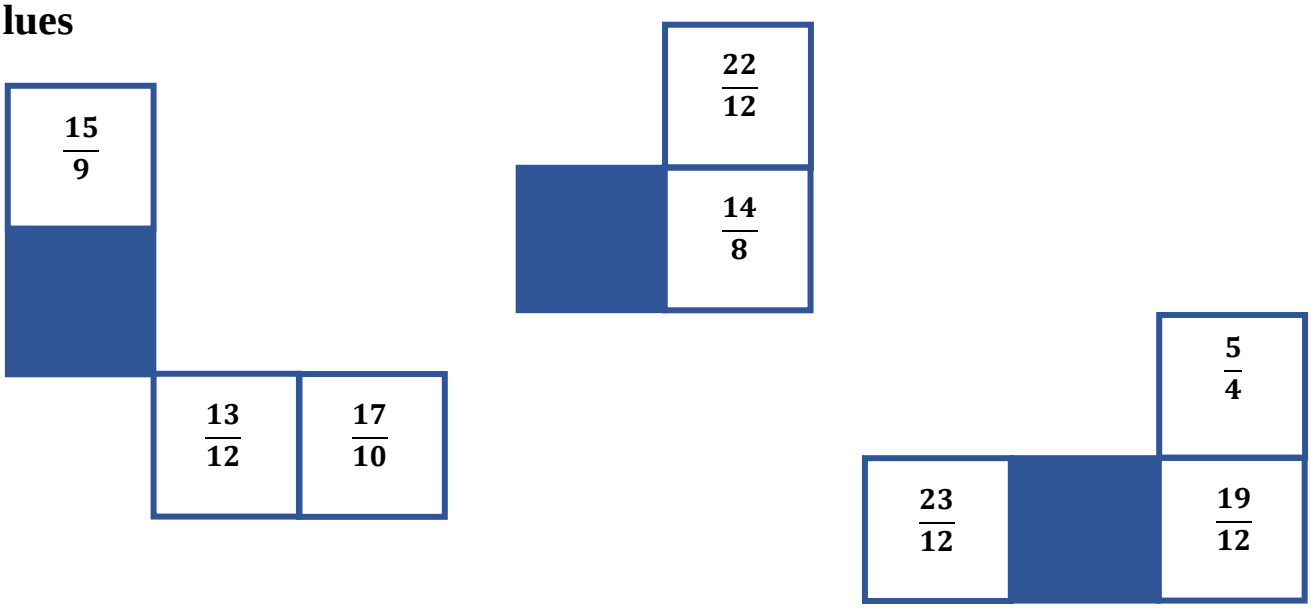
Improper Number Grid

Proper Number Grid

Section 2
Mixed Denominators

Make It Proper 29

Clues



Use the clues.
Place these fractions in the Improper Number Grid:

$$\frac{5}{4}, \frac{14}{6}, \frac{14}{8}, \frac{15}{9}, \frac{17}{10}, \frac{13}{12}, \frac{19}{12}, \frac{22}{12}, \frac{23}{12}$$

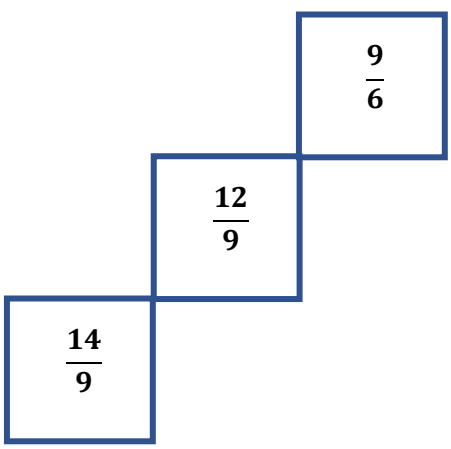
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

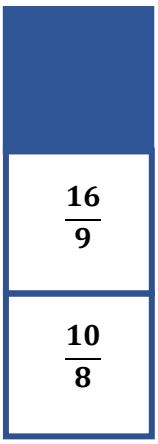
Improper Number Grid

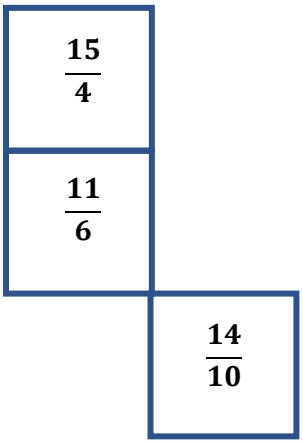
Proper Number Grid

Make It Proper 30

Clues







Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{15}{4}, \frac{9}{6}, \frac{11}{6}, \frac{10}{8}, \frac{12}{9}, \frac{14}{9}, \frac{16}{9}, \frac{14}{10}, \frac{14}{12}$$

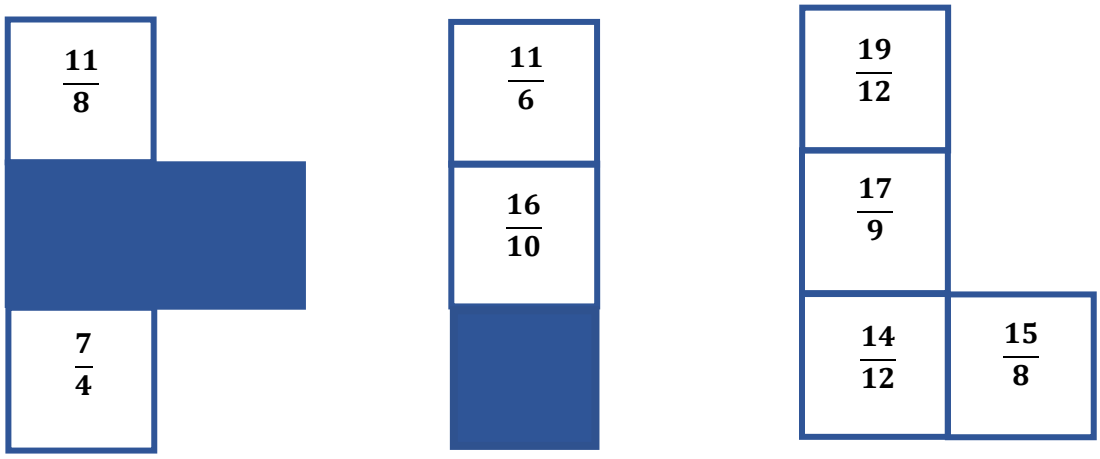
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 31

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{7}{4}, \frac{11}{6}, \frac{11}{8}, \frac{15}{8}, \frac{11}{9}, \frac{17}{9}, \frac{16}{10}, \frac{14}{12}, \frac{19}{12}$$

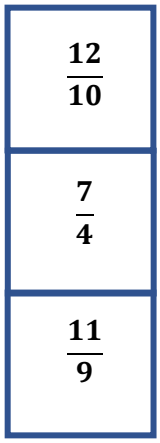
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

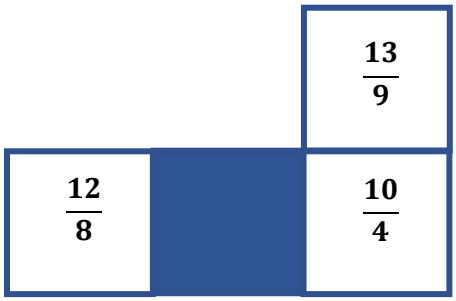
Improper Number Grid

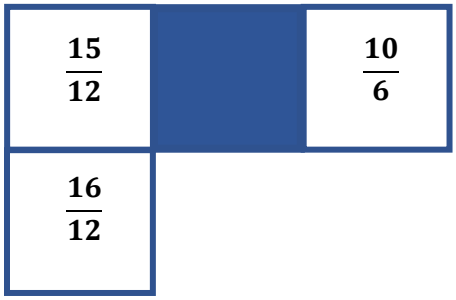
Proper Number Grid

Make It Proper 32

Clues







Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{7}{4}, \frac{10}{4}, \frac{10}{6}, \frac{12}{8}, \frac{11}{9}, \frac{13}{9}, \frac{12}{10}, \frac{15}{12}, \frac{16}{12}$$

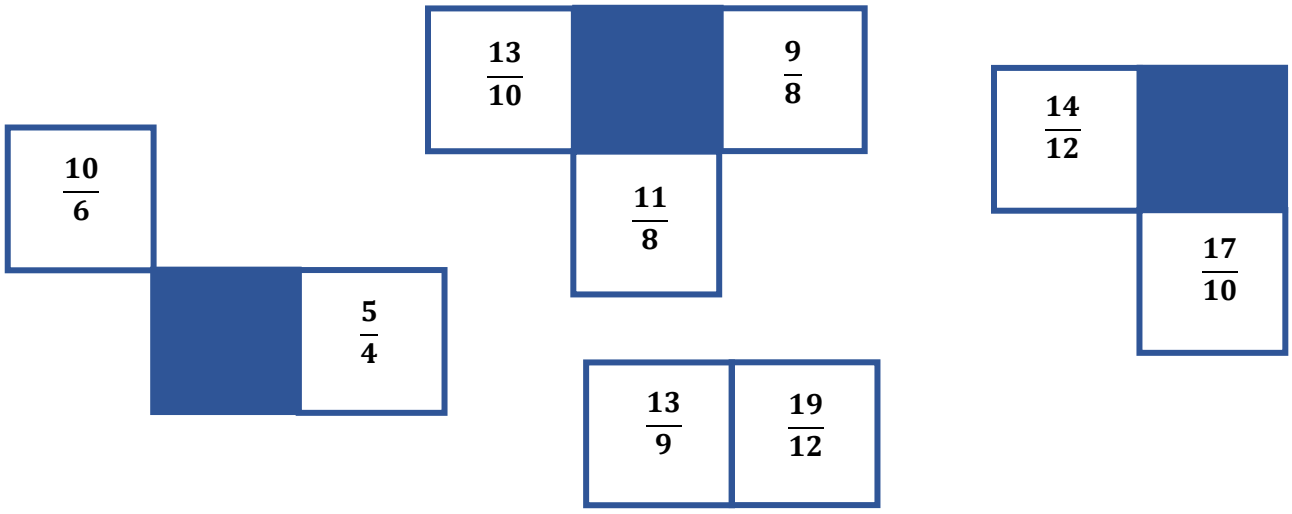
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 33

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{5}{4}, \frac{10}{6}, \frac{9}{8}, \frac{11}{8}, \frac{13}{9}, \frac{13}{10}, \frac{17}{10}, \frac{14}{12}, \frac{19}{12}$$

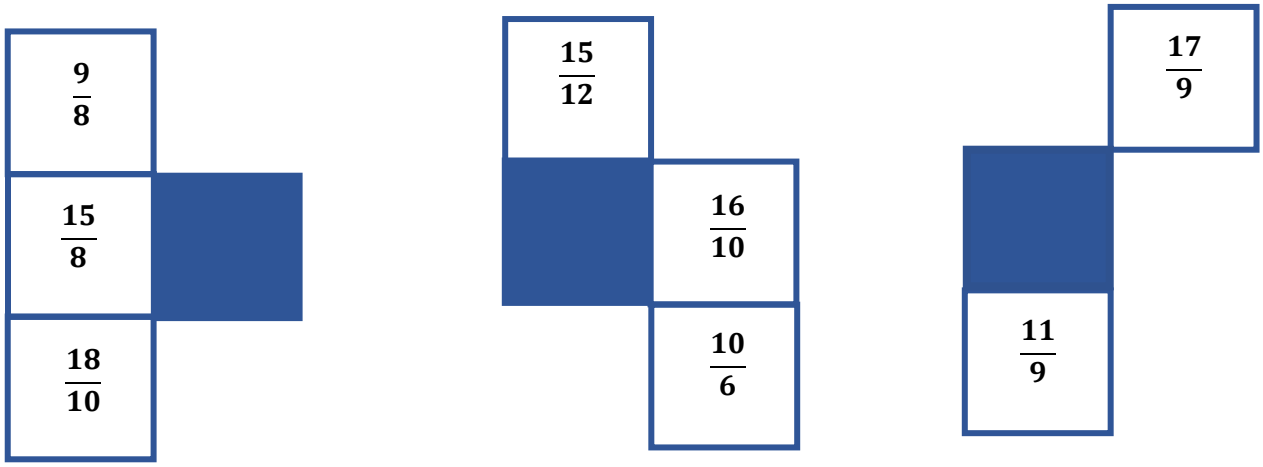
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 34

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{7}{4}, \frac{10}{6}, \frac{9}{8}, \frac{15}{8}, \frac{11}{9}, \frac{17}{9}, \frac{16}{10}, \frac{18}{10}, \frac{15}{12}$$

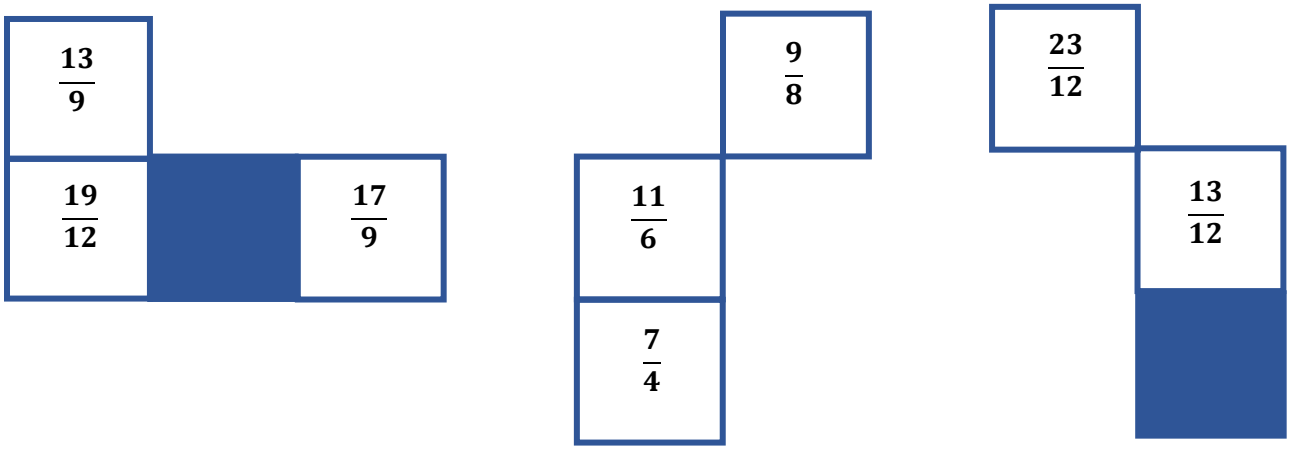
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 35

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{7}{4}, \frac{11}{6}, \frac{9}{8}, \frac{13}{9}, \frac{17}{9}, \frac{18}{10}, \frac{13}{12}, \frac{19}{12}, \frac{23}{12}$$

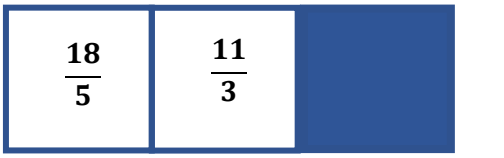
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

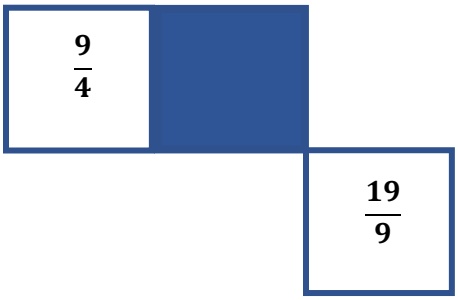
Improper Number Grid

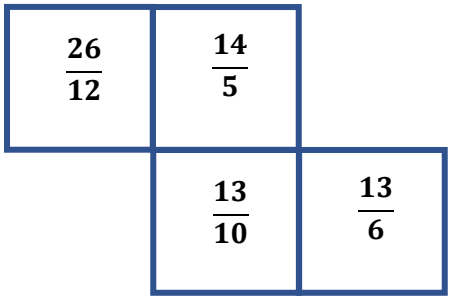
Proper Number Grid

Make It Proper 36

Clues







Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{11}{3}, \frac{9}{4}, \frac{14}{5}, \frac{18}{5}, \frac{13}{6}, \frac{11}{8}, \frac{19}{9}, \frac{13}{10}, \frac{26}{12}$$

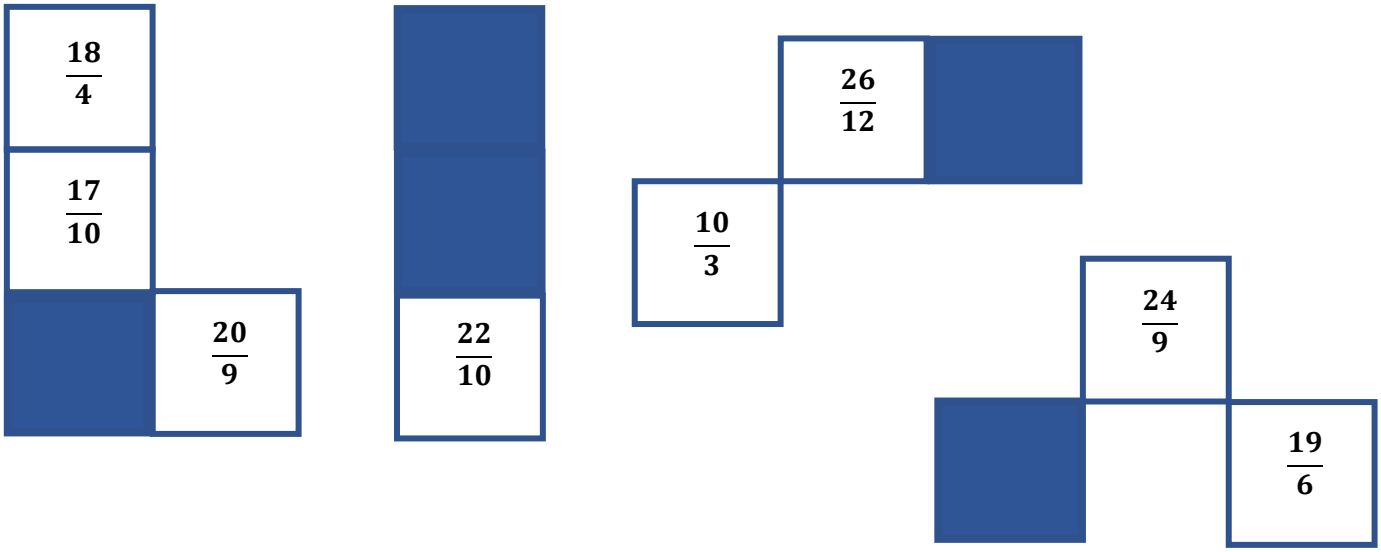
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 37

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{10}{3}, \frac{18}{4}, \frac{19}{6}, \frac{20}{8}, \frac{20}{9}, \frac{24}{9}, \frac{17}{10}, \frac{22}{10}, \frac{26}{12}$$

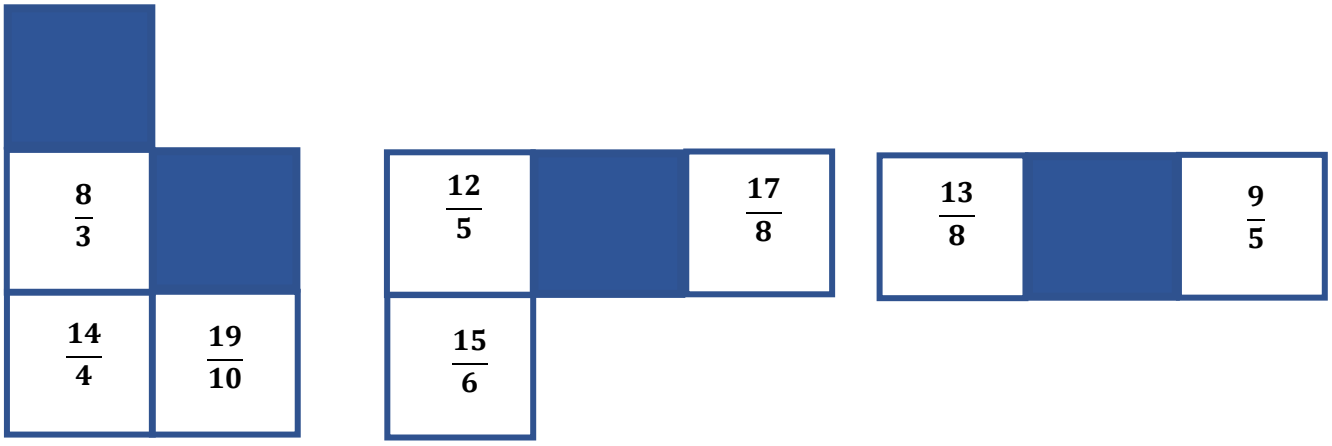
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 38

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{8}{3}, \frac{14}{4}, \frac{9}{5}, \frac{12}{5}, \frac{15}{6}, \frac{13}{8}, \frac{17}{8}, \frac{19}{10}, \frac{17}{12}$$

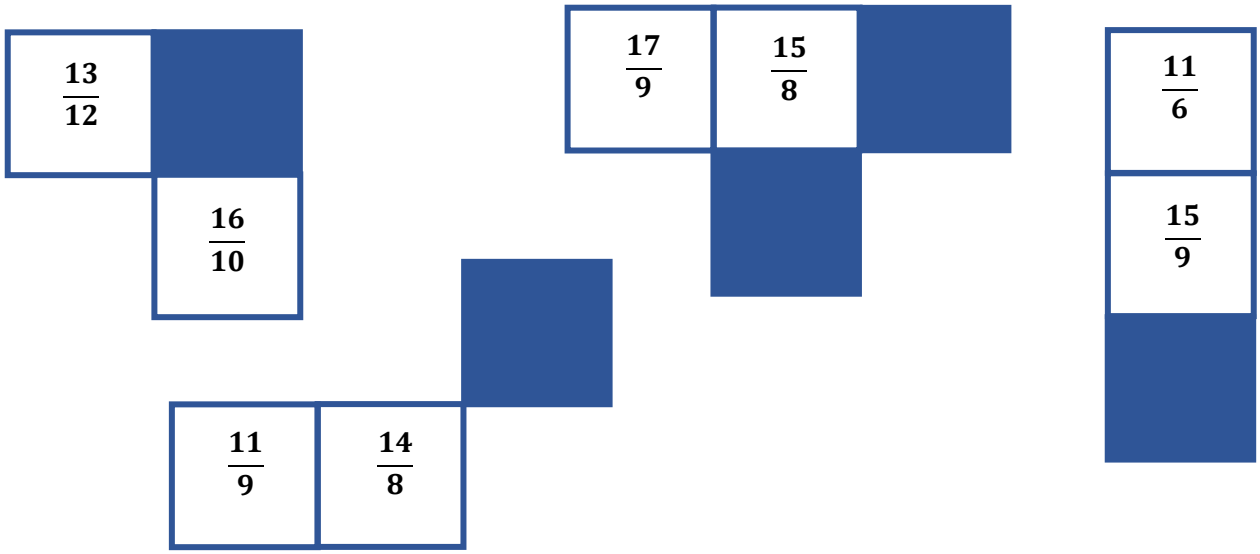
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 39

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{5}{4}, \frac{11}{6}, \frac{14}{8}, \frac{15}{8}, \frac{11}{9}, \frac{15}{9}, \frac{17}{9}, \frac{16}{10}, \frac{13}{12}$$

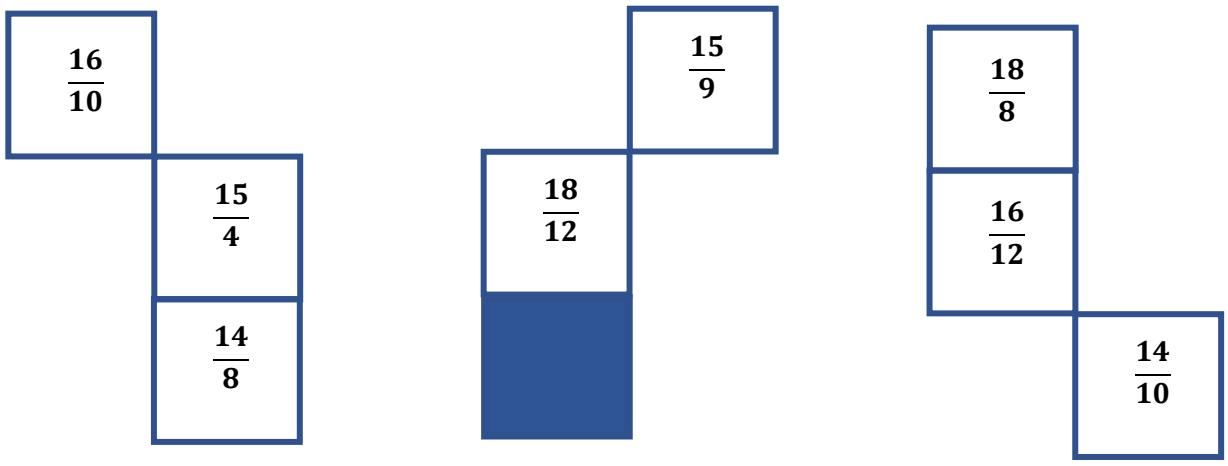
Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Make It Proper 40

Clues



Use the clues.

Place these fractions in the Improper Number Grid:

$$\frac{15}{4}, \frac{14}{6}, \frac{14}{8}, \frac{18}{8}, \frac{15}{9}, \frac{14}{10}, \frac{16}{10}, \frac{16}{12}, \frac{18}{12}$$

Place proper number equivalents in the Proper Number Grid. Be sure to simplify fractions.

Improper Number Grid

Proper Number Grid

Solutions

Make It Proper 1

Improper Number Grid

$\frac{12}{9}$	$\frac{17}{9}$	$\frac{16}{9}$
$\frac{11}{9}$	$\frac{15}{9}$	$\frac{10}{9}$
$\frac{14}{9}$	$\frac{18}{9}$	$\frac{13}{9}$

Proper Number Grid

$1\frac{1}{3}$	$1\frac{8}{9}$	$1\frac{7}{9}$
$1\frac{2}{9}$	$1\frac{2}{3}$	$1\frac{1}{9}$
$1\frac{5}{9}$	2	$1\frac{4}{9}$

Make It Proper 2

Improper Number Grid

$\frac{28}{16}$	$\frac{32}{16}$	$\frac{33}{16}$
$\frac{34}{16}$	$\frac{26}{16}$	$\frac{31}{16}$
$\frac{27}{16}$	$\frac{30}{16}$	$\frac{29}{16}$

Proper Number Grid

$1\frac{3}{4}$	2	$2\frac{1}{16}$
$2\frac{1}{8}$	$1\frac{5}{8}$	$1\frac{15}{16}$
$1\frac{11}{16}$	$1\frac{7}{8}$	$1\frac{13}{16}$

Make It Proper 3

Improper Number Grid

$\frac{10}{5}$	$\frac{7}{5}$	$\frac{13}{5}$
$\frac{14}{5}$	$\frac{12}{5}$	$\frac{6}{5}$
$\frac{8}{5}$	$\frac{9}{5}$	$\frac{11}{5}$

Proper Number Grid

2	$1\frac{2}{5}$	$2\frac{3}{5}$
$2\frac{4}{5}$	$2\frac{2}{5}$	$1\frac{1}{5}$
$1\frac{3}{5}$	$1\frac{4}{5}$	$2\frac{1}{5}$

Make It Proper 4

Improper Number Grid

$\frac{29}{18}$	$\frac{34}{18}$	$\frac{31}{18}$
$\frac{36}{18}$	$\frac{30}{18}$	$\frac{35}{18}$
$\frac{32}{18}$	$\frac{28}{18}$	$\frac{33}{18}$

Proper Number Grid

$1\frac{11}{18}$	$1\frac{8}{9}$	$1\frac{13}{18}$
2	$1\frac{2}{3}$	$1\frac{17}{18}$
$1\frac{7}{9}$	$1\frac{5}{9}$	$1\frac{5}{6}$

Make It Proper 5

Improper Number Grid

$\frac{22}{12}$	$\frac{30}{12}$	$\frac{27}{12}$
$\frac{26}{12}$	$\frac{23}{12}$	$\frac{29}{12}$
$\frac{24}{12}$	$\frac{28}{12}$	$\frac{25}{12}$

Proper Number Grid

$1\frac{5}{6}$	$2\frac{1}{2}$	$2\frac{1}{4}$
$2\frac{1}{6}$	$1\frac{11}{12}$	$2\frac{5}{12}$
2	$2\frac{1}{3}$	$2\frac{1}{12}$

Make It Proper 6

Improper Number Grid

$\frac{14}{10}$	$\frac{12}{10}$	$\frac{17}{10}$
$\frac{18}{10}$	$\frac{11}{10}$	$\frac{13}{10}$
$\frac{16}{10}$	$\frac{15}{10}$	$\frac{19}{10}$

Proper Number Grid

$1\frac{2}{5}$	$1\frac{1}{5}$	$1\frac{7}{10}$
$1\frac{4}{5}$	$1\frac{1}{10}$	$1\frac{3}{10}$
$1\frac{3}{5}$	$1\frac{1}{2}$	$1\frac{9}{10}$

Make It Proper 7

Improper Number Grid

$\frac{26}{8}$	$\frac{18}{8}$	$\frac{25}{8}$
$\frac{21}{8}$	$\frac{24}{8}$	$\frac{20}{8}$
$\frac{19}{8}$	$\frac{22}{8}$	$\frac{23}{8}$

Proper Number Grid

$3\frac{1}{4}$	$2\frac{1}{4}$	$3\frac{1}{8}$
$2\frac{5}{8}$	3	$2\frac{1}{2}$
$2\frac{3}{8}$	$2\frac{3}{4}$	$2\frac{7}{8}$

Make It Proper 8

Improper Number Grid

$\frac{25}{20}$	$\frac{28}{20}$	$\frac{23}{20}$
$\frac{21}{20}$	$\frac{26}{20}$	$\frac{22}{20}$
$\frac{24}{20}$	$\frac{29}{20}$	$\frac{27}{20}$

Proper Number Grid

$1\frac{1}{4}$	$1\frac{2}{5}$	$1\frac{3}{20}$
$1\frac{1}{20}$	$1\frac{3}{10}$	$1\frac{1}{10}$
$1\frac{1}{5}$	$1\frac{9}{20}$	$1\frac{7}{20}$

Make It Proper 9

Improper Number Grid

$\frac{23}{15}$	$\frac{19}{15}$	$\frac{18}{15}$
$\frac{22}{15}$	$\frac{16}{15}$	$\frac{21}{15}$
$\frac{17}{15}$	$\frac{20}{15}$	$\frac{24}{15}$

Proper Number Grid

$1\ \frac{8}{15}$	$1\ \frac{4}{15}$	$1\ \frac{1}{5}$
$1\ \frac{7}{15}$	$1\ \frac{1}{15}$	$1\ \frac{2}{5}$
$1\ \frac{2}{15}$	$1\ \frac{1}{3}$	$1\ \frac{3}{5}$

Make It Proper 10

Improper Number Grid

$\frac{8}{3}$	$\frac{9}{3}$	$\frac{6}{3}$
$\frac{7}{3}$	$\frac{4}{3}$	$\frac{12}{3}$
$\frac{5}{3}$	$\frac{10}{3}$	$\frac{11}{3}$

Proper Number Grid

$2\ \frac{2}{3}$	3	2
$2\ \frac{1}{3}$	$1\ \frac{1}{3}$	4
$1\ \frac{2}{3}$	$3\ \frac{1}{3}$	$3\ \frac{2}{3}$

Make It Proper 11

Improper Number Grid

$\frac{9}{6}$	$\frac{7}{6}$	$\frac{15}{6}$
$\frac{14}{6}$	$\frac{13}{6}$	$\frac{12}{6}$
$\frac{11}{6}$	$\frac{8}{6}$	$\frac{10}{6}$

Proper Number Grid

$1\ \frac{1}{2}$	$1\ \frac{1}{6}$	$2\ \frac{1}{2}$
$2\ \frac{1}{3}$	$2\ \frac{1}{6}$	2
$1\ \frac{5}{6}$	$1\ \frac{1}{3}$	$1\ \frac{2}{3}$

Make It Proper 12

Improper Number Grid

$\frac{20}{9}$	$\frac{27}{9}$	$\frac{25}{9}$
$\frac{26}{9}$	$\frac{22}{9}$	$\frac{21}{9}$
$\frac{19}{9}$	$\frac{23}{9}$	$\frac{24}{9}$

Proper Number Grid

$2\ \frac{2}{9}$	3	$2\ \frac{7}{9}$
$2\ \frac{8}{9}$	$2\ \frac{4}{9}$	$2\ \frac{1}{3}$
$2\ \frac{1}{9}$	$2\ \frac{5}{9}$	$2\ \frac{2}{3}$

Make It Proper 13

Improper Number Grid

$\frac{16}{12}$	$\frac{13}{12}$	$\frac{19}{12}$
$\frac{14}{12}$	$\frac{15}{12}$	$\frac{17}{12}$
$\frac{18}{12}$	$\frac{21}{12}$	$\frac{20}{12}$

Proper Number Grid

$1\frac{1}{3}$	$1\frac{1}{12}$	$1\frac{7}{12}$
$1\frac{1}{6}$	$1\frac{1}{4}$	$1\frac{5}{12}$
$1\frac{1}{2}$	$1\frac{3}{4}$	$1\frac{2}{3}$

Make It Proper 14

Improper Number Grid

$\frac{22}{4}$	$\frac{19}{4}$	$\frac{16}{4}$
$\frac{14}{4}$	$\frac{21}{4}$	$\frac{18}{4}$
$\frac{17}{4}$	$\frac{15}{4}$	$\frac{20}{4}$

Proper Number Grid

$5\frac{1}{2}$	$4\frac{3}{4}$	4
$3\frac{1}{2}$	$5\frac{1}{4}$	$4\frac{1}{2}$
$4\frac{1}{4}$	$3\frac{3}{4}$	5

Make It Proper 15

Improper Number Grid

$\frac{20}{14}$	$\frac{18}{14}$	$\frac{23}{14}$
$\frac{19}{14}$	$\frac{15}{14}$	$\frac{21}{14}$
$\frac{16}{14}$	$\frac{22}{14}$	$\frac{17}{14}$

Proper Number Grid

$1\ \frac{3}{7}$	$1\ \frac{2}{7}$	$1\ \frac{9}{14}$
$1\ \frac{5}{14}$	$1\ \frac{1}{14}$	$1\ \frac{1}{2}$
$1\ \frac{1}{7}$	$1\ \frac{4}{7}$	$1\ \frac{3}{14}$

Make It Proper 16

Improper Number Grid

$\frac{13}{3}$	$\frac{21}{3}$	$\frac{17}{3}$
$\frac{15}{3}$	$\frac{16}{3}$	$\frac{20}{3}$
$\frac{18}{3}$	$\frac{19}{3}$	$\frac{14}{3}$

Proper Number Grid

$4\ \frac{1}{3}$	7	$5\ \frac{2}{3}$
5	$5\ \frac{1}{3}$	$6\ \frac{2}{3}$
6	$6\ \frac{1}{3}$	$4\ \frac{2}{3}$

Make It Proper 17

Improper Number Grid

$\frac{25}{16}$	$\frac{21}{16}$	$\frac{19}{16}$
$\frac{20}{16}$	$\frac{18}{16}$	$\frac{23}{16}$
$\frac{22}{16}$	$\frac{24}{16}$	$\frac{17}{16}$

Proper Number Grid

$1\ \frac{9}{16}$	$1\ \frac{5}{16}$	$1\ \frac{3}{16}$
$1\ \frac{1}{4}$	$1\ \frac{1}{8}$	$1\ \frac{7}{16}$
$1\ \frac{3}{8}$	$1\ \frac{1}{2}$	$1\ \frac{1}{16}$

Make It Proper 18

Improper Number Grid

$\frac{26}{24}$	$\frac{31}{24}$	$\frac{33}{24}$
$\frac{30}{24}$	$\frac{28}{24}$	$\frac{25}{24}$
$\frac{29}{24}$	$\frac{27}{24}$	$\frac{32}{24}$

Proper Number Grid

$1\ \frac{1}{12}$	$1\ \frac{7}{24}$	$1\ \frac{3}{8}$
$1\ \frac{1}{4}$	$1\ \frac{1}{6}$	$1\ \frac{1}{24}$
$1\ \frac{5}{24}$	$1\ \frac{1}{8}$	$1\ \frac{1}{3}$

Make It Proper 19

Improper Number Grid

$\frac{23}{18}$	$\frac{21}{18}$	$\frac{26}{18}$
$\frac{19}{18}$	$\frac{27}{18}$	$\frac{24}{18}$
$\frac{25}{18}$	$\frac{20}{18}$	$\frac{22}{18}$

Proper Number Grid

$1\frac{5}{18}$	$1\frac{1}{6}$	$1\frac{4}{9}$
$1\frac{1}{18}$	$1\frac{1}{2}$	$1\frac{1}{3}$
$1\frac{7}{18}$	$1\frac{1}{9}$	$1\frac{2}{9}$

Make It Proper 20

Improper Number Grid

$\frac{21}{5}$	$\frac{20}{5}$	$\frac{18}{5}$
$\frac{22}{5}$	$\frac{19}{5}$	$\frac{16}{5}$
$\frac{15}{5}$	$\frac{17}{5}$	$\frac{23}{5}$

Proper Number Grid

$4\frac{1}{5}$	4	$3\frac{3}{5}$
$4\frac{2}{5}$	$3\frac{4}{5}$	$3\frac{1}{5}$
3	$3\frac{2}{5}$	$4\frac{3}{5}$

Make It Proper 21

Improper Number Grid

$\frac{22}{10}$	$\frac{24}{10}$	$\frac{23}{10}$
$\frac{26}{10}$	$\frac{25}{10}$	$\frac{27}{10}$
$\frac{21}{10}$	$\frac{28}{10}$	$\frac{20}{10}$

Proper Number Grid

$2\frac{1}{5}$	$2\frac{2}{5}$	$2\frac{3}{10}$
$2\frac{3}{5}$	$2\frac{1}{2}$	$2\frac{7}{10}$
$2\frac{1}{10}$	$2\frac{4}{5}$	2

Make It Proper 22

Improper Number Grid

$\frac{12}{4}$	$\frac{8}{4}$	$\frac{10}{4}$
$\frac{5}{4}$	$\frac{9}{4}$	$\frac{11}{4}$
$\frac{6}{4}$	$\frac{7}{4}$	$\frac{13}{4}$

Proper Number Grid

3	2	$2\frac{1}{2}$
$1\frac{1}{4}$	$2\frac{1}{4}$	$2\frac{3}{4}$
$1\frac{1}{2}$	$1\frac{3}{4}$	$3\frac{1}{4}$

Make It Proper 23

Improper Number Grid

$\frac{34}{24}$	$\frac{36}{24}$	$\frac{41}{24}$
$\frac{40}{24}$	$\frac{42}{24}$	$\frac{38}{24}$
$\frac{35}{24}$	$\frac{39}{24}$	$\frac{37}{24}$

Proper Number Grid

$1\frac{5}{12}$	$1\frac{1}{2}$	$1\frac{17}{24}$
$1\frac{2}{3}$	$1\frac{3}{4}$	$1\frac{7}{12}$
$1\frac{11}{24}$	$1\frac{5}{8}$	$1\frac{13}{24}$

Make It Proper 24

Improper Number Grid

$\frac{26}{15}$	$\frac{31}{15}$	$\frac{29}{15}$
$\frac{30}{15}$	$\frac{28}{15}$	$\frac{27}{15}$
$\frac{25}{15}$	$\frac{33}{15}$	$\frac{32}{15}$

Proper Number Grid

$1\frac{11}{15}$	$2\frac{1}{15}$	$1\frac{14}{15}$
2	$1\frac{13}{15}$	$1\frac{4}{5}$
$1\frac{2}{3}$	$2\frac{1}{5}$	$2\frac{2}{15}$

Make It Proper 25

Improper Number Grid

$\frac{22}{14}$	$\frac{26}{14}$	$\frac{28}{14}$
$\frac{20}{14}$	$\frac{23}{14}$	$\frac{21}{14}$
$\frac{27}{14}$	$\frac{24}{14}$	$\frac{25}{14}$

Proper Number Grid

$1\frac{4}{7}$	$1\frac{6}{7}$	2
$1\frac{3}{7}$	$1\frac{9}{14}$	$1\frac{1}{2}$
$1\frac{13}{14}$	$1\frac{5}{7}$	$1\frac{11}{14}$

Make It Proper 26

Improper Number Grid

$\frac{17}{6}$	$\frac{18}{6}$	$\frac{19}{6}$
$\frac{16}{6}$	$\frac{22}{6}$	$\frac{23}{6}$
$\frac{20}{6}$	$\frac{24}{6}$	$\frac{21}{6}$

Proper Number Grid

$2\frac{5}{6}$	3	$3\frac{1}{6}$
$2\frac{2}{3}$	$3\frac{2}{3}$	$3\frac{5}{6}$
$3\frac{1}{3}$	4	$3\frac{1}{2}$

Make It Proper 27

Improper Number Grid

$\frac{9}{8}$	$\frac{14}{8}$	$\frac{17}{8}$
$\frac{12}{8}$	$\frac{13}{8}$	$\frac{11}{8}$
$\frac{16}{8}$	$\frac{15}{8}$	$\frac{10}{8}$

Proper Number Grid

$1\frac{1}{8}$	$1\frac{3}{4}$	$2\frac{1}{8}$
$1\frac{1}{2}$	$1\frac{5}{8}$	$1\frac{3}{8}$
2	$1\frac{7}{8}$	$1\frac{1}{4}$

Make It Proper 28

Improper Number Grid

$\frac{37}{20}$	$\frac{34}{20}$	$\frac{32}{20}$
$\frac{36}{20}$	$\frac{30}{20}$	$\frac{35}{20}$
$\frac{31}{20}$	$\frac{33}{20}$	$\frac{28}{20}$

Proper Number Grid

$1\frac{17}{20}$	$1\frac{7}{10}$	$1\frac{3}{5}$
$1\frac{4}{5}$	$1\frac{1}{2}$	$1\frac{3}{4}$
$1\frac{11}{20}$	$1\frac{13}{20}$	$1\frac{9}{10}$

Make It Proper 29

Improper Number Grid

$\frac{15}{9}$	$\frac{22}{12}$	$\frac{5}{4}$
$\frac{23}{12}$	$\frac{14}{8}$	$\frac{19}{12}$
$\frac{14}{6}$	$\frac{13}{12}$	$\frac{17}{10}$

Proper Number Grid

$1\ \frac{2}{3}$	$1\ \frac{5}{6}$	$1\ \frac{1}{4}$
$1\ \frac{11}{12}$	$1\ \frac{3}{4}$	$1\ \frac{7}{12}$
$2\ \frac{1}{3}$	$1\ \frac{1}{12}$	$1\ \frac{7}{10}$

Make It Proper 30

Improper Number Grid

$\frac{15}{4}$	$\frac{14}{12}$	$\frac{9}{6}$
$\frac{11}{6}$	$\frac{12}{9}$	$\frac{16}{9}$
$\frac{14}{9}$	$\frac{14}{10}$	$\frac{10}{8}$

Proper Number Grid

$3\ \frac{3}{4}$	$1\ \frac{1}{6}$	$1\ \frac{1}{2}$
$1\ \frac{5}{6}$	$1\ \frac{1}{3}$	$1\ \frac{7}{9}$
$1\ \frac{5}{9}$	$1\ \frac{2}{5}$	$1\ \frac{1}{4}$

Make It Proper 31

Improper Number Grid

$\frac{11}{8}$	$\frac{19}{12}$	$\frac{11}{6}$
$\frac{11}{9}$	$\frac{17}{9}$	$\frac{16}{10}$
$\frac{7}{4}$	$\frac{14}{12}$	$\frac{15}{8}$

Proper Number Grid

$1\frac{3}{8}$	$1\frac{7}{12}$	$1\frac{5}{6}$
$1\frac{2}{9}$	$1\frac{8}{9}$	$1\frac{3}{5}$
$1\frac{3}{4}$	$1\frac{1}{6}$	$1\frac{7}{8}$

Make It Proper 32

Improper Number Grid

$\frac{15}{12}$	$\frac{12}{10}$	$\frac{10}{6}$
$\frac{16}{12}$	$\frac{7}{4}$	$\frac{13}{9}$
$\frac{12}{8}$	$\frac{11}{9}$	$\frac{10}{4}$

Proper Number Grid

$1\frac{1}{4}$	$1\frac{1}{5}$	$1\frac{2}{3}$
$1\frac{1}{3}$	$1\frac{3}{4}$	$1\frac{4}{9}$
$1\frac{1}{2}$	$1\frac{2}{9}$	$2\frac{1}{2}$

Make It Proper 33

Improper Number Grid

$\frac{13}{10}$	$\frac{14}{12}$	$\frac{9}{8}$
$\frac{10}{6}$	$\frac{11}{8}$	$\frac{17}{10}$
$\frac{13}{9}$	$\frac{19}{12}$	$\frac{5}{4}$

Proper Number Grid

$1\ \frac{3}{10}$	$1\ \frac{1}{6}$	$1\ \frac{1}{8}$
$1\ \frac{2}{3}$	$1\ \frac{3}{8}$	$1\ \frac{7}{10}$
$1\ \frac{4}{9}$	$1\ \frac{7}{12}$	$1\ \frac{1}{4}$

Make It Proper 34

Improper Number Grid

$\frac{9}{8}$	$\frac{15}{12}$	$\frac{17}{9}$
$\frac{15}{8}$	$\frac{7}{4}$	$\frac{16}{10}$
$\frac{18}{10}$	$\frac{11}{9}$	$\frac{10}{6}$

Proper Number Grid

$1\ \frac{1}{8}$	$1\ \frac{1}{4}$	$1\ \frac{8}{9}$
$1\ \frac{7}{8}$	$1\ \frac{3}{4}$	$1\ \frac{3}{5}$
$1\ \frac{4}{5}$	$1\ \frac{2}{9}$	$1\ \frac{2}{3}$

Make It Proper 35

Improper Number Grid

$\frac{18}{10}$	$\frac{23}{12}$	$\frac{9}{8}$
$\frac{13}{9}$	$\frac{11}{6}$	$\frac{13}{12}$
$\frac{19}{12}$	$\frac{7}{4}$	$\frac{17}{9}$

Proper Number Grid

$1\frac{4}{5}$	$1\frac{11}{12}$	$1\frac{1}{8}$
$1\frac{4}{9}$	$1\frac{5}{6}$	$1\frac{1}{12}$
$1\frac{7}{19}$	$1\frac{3}{4}$	$1\frac{8}{9}$

Make It Proper 36

Improper Number Grid

$\frac{26}{12}$	$\frac{14}{5}$	$\frac{11}{8}$
$\frac{9}{4}$	$\frac{13}{10}$	$\frac{13}{6}$
$\frac{18}{5}$	$\frac{11}{3}$	$\frac{19}{9}$

Proper Number Grid

$2\frac{1}{6}$	$2\frac{4}{5}$	$1\frac{3}{8}$
$2\frac{1}{4}$	$1\frac{3}{10}$	$2\frac{1}{6}$
$3\frac{3}{5}$	$3\frac{2}{3}$	$2\frac{1}{9}$

Make It Proper 37

Improper Number Grid

$\frac{18}{4}$	$\frac{24}{9}$	$\frac{20}{8}$
$\frac{17}{10}$	$\frac{26}{12}$	$\frac{19}{6}$
$\frac{10}{3}$	$\frac{20}{9}$	$\frac{22}{10}$

Proper Number Grid

$4\frac{1}{2}$	$2\frac{2}{3}$	$2\frac{1}{2}$
$1\frac{7}{10}$	$2\frac{1}{6}$	$3\frac{1}{6}$
$3\frac{1}{3}$	$2\frac{2}{9}$	$2\frac{1}{5}$

Make It Proper 38

Improper Number Grid

$\frac{13}{8}$	$\frac{17}{12}$	$\frac{9}{5}$
$\frac{12}{5}$	$\frac{8}{3}$	$\frac{17}{8}$
$\frac{15}{6}$	$\frac{14}{4}$	$\frac{19}{10}$

Proper Number Grid

$1\frac{5}{8}$	$1\frac{5}{12}$	$1\frac{4}{5}$
$2\frac{2}{5}$	$2\frac{2}{3}$	$2\frac{1}{8}$
$2\frac{1}{2}$	$3\frac{1}{2}$	$1\frac{9}{10}$

Make It Proper 39

Improper Number Grid

$\frac{17}{9}$	$\frac{15}{8}$	$\frac{11}{6}$
$\frac{5}{4}$	$\frac{13}{12}$	$\frac{15}{9}$
$\frac{11}{9}$	$\frac{14}{8}$	$\frac{16}{10}$

Proper Number Grid

$1\ \frac{8}{9}$	$1\ \frac{7}{8}$	$1\ \frac{5}{6}$
$1\ \frac{1}{4}$	$1\ \frac{1}{12}$	$1\ \frac{2}{3}$
$1\ \frac{2}{9}$	$1\ \frac{3}{4}$	$1\ \frac{3}{5}$

Make It Proper 40

Improper Number Grid

$\frac{18}{8}$	$\frac{16}{10}$	$\frac{15}{9}$
$\frac{16}{12}$	$\frac{18}{12}$	$\frac{15}{4}$
$\frac{14}{6}$	$\frac{14}{10}$	$\frac{14}{8}$

Proper Number Grid

$2\ \frac{1}{4}$	$1\ \frac{3}{5}$	$1\ \frac{2}{3}$
$1\ \frac{1}{3}$	$1\ \frac{1}{2}$	$3\ \frac{3}{4}$
$2\ \frac{1}{3}$	$1\ \frac{2}{5}$	$1\ \frac{3}{4}$