Colin and Coco's Daily Maths Workout

Workout 5.4   Answers

Fractions: Representing and Equivalence

Fractions: Workout

Compare the fractions using < , > or =

$\dfrac{1}{4}$ < $\dfrac{3}{8}$ $\dfrac{5}{9}$ < $\dfrac{2}{3}$ $\dfrac{3}{8}$ < $\dfrac{3}{4}$ $\dfrac{10}{12}$ > $\dfrac{2}{3}$

$\dfrac{3}{5}$ > $\dfrac{1}{10}$ $\dfrac{3}{4}$ > $\dfrac{8}{12}$ $\dfrac{3}{3}$ > $\dfrac{3}{9}$ $\dfrac{5}{6}$ > $\dfrac{20}{30}$

$\dfrac{3}{6}$ > $\dfrac{1}{3}$ $\dfrac{4}{8}$ = $\dfrac{1}{2}$ $\dfrac{3}{4}$ > $\dfrac{3}{8}$ $\dfrac{13}{20}$ < $\dfrac{3}{4}$

$\dfrac{1}{2}$ < $\dfrac{6}{8}$ $\dfrac{2}{6}$ < $\dfrac{5}{12}$ $\dfrac{2}{3}$ > $\dfrac{2}{9}$ $\dfrac{15}{25}$ = $\dfrac{3}{5}$

Fractions: Workout

Put the fractions in order from smallest to largest.

$\dfrac{3}{8}, \dfrac{1}{4}, \dfrac{3}{4}, \dfrac{1}{8}$ | $\dfrac{1}{8}$ $\dfrac{1}{4}$ $\dfrac{3}{8}$ $\dfrac{3}{4}$ | $\dfrac{1}{2}, \dfrac{3}{8}, \dfrac{3}{4}, \dfrac{1}{8}$ | $\dfrac{1}{8}$ $\dfrac{3}{8}$ $\dfrac{1}{2}$ $\dfrac{3}{4}$ | $\dfrac{7}{12}, \dfrac{1}{2}, \dfrac{1}{4}, \dfrac{3}{4}$ | $\dfrac{1}{4}$ $\dfrac{1}{2}$ $\dfrac{7}{12}$ $\dfrac{3}{4}$ |

$\dfrac{2}{3}, \dfrac{1}{6}, \dfrac{3}{6}, \dfrac{1}{3}$ | $\dfrac{1}{6}$ $\dfrac{1}{3}$ $\dfrac{3}{6}$ $\dfrac{2}{3}$ | $\dfrac{2}{3}, \dfrac{5}{6}, \dfrac{4}{12}, \dfrac{1}{6}$ | $\dfrac{1}{6}$ $\dfrac{4}{12}$ $\dfrac{2}{3}$ $\dfrac{5}{6}$ | $\dfrac{11}{12}, \dfrac{5}{6}, \dfrac{9}{12}, \dfrac{2}{3}$ | $\dfrac{2}{3}$ $\dfrac{9}{12}$ $\dfrac{5}{6}$ $\dfrac{11}{12}$ |

$\dfrac{1}{3}, \dfrac{7}{9}, \dfrac{5}{9}, \dfrac{2}{3}$ | $\dfrac{1}{3}$ $\dfrac{5}{9}$ $\dfrac{2}{3}$ $\dfrac{7}{9}$ | $\dfrac{1}{3}, \dfrac{4}{9}, \dfrac{2}{9}, \dfrac{7}{18}$ | $\dfrac{2}{9}$ $\dfrac{1}{3}$ $\dfrac{7}{18}$ $\dfrac{4}{9}$ | $\dfrac{4}{5}, \dfrac{2}{7}, \dfrac{3}{6}, \dfrac{1}{8}$ | $\dfrac{1}{8}$ $\dfrac{2}{7}$ $\dfrac{3}{6}$ $\dfrac{4}{5}$ |

$\dfrac{6}{10}, \dfrac{4}{5}, \dfrac{3}{10}, \dfrac{2}{5}$ | $\dfrac{3}{10}$ $\dfrac{2}{5}$ $\dfrac{6}{10}$ $\dfrac{4}{5}$ | $\dfrac{3}{10}, \dfrac{3}{5}, \dfrac{8}{20}, \dfrac{5}{10}$ | $\dfrac{3}{10}$ $\dfrac{8}{20}$ $\dfrac{5}{10}$ $\dfrac{3}{5}$ | $\dfrac{3}{4}, \dfrac{11}{16}, \dfrac{15}{16}, \dfrac{7}{8}$ | $\dfrac{11}{16}$ $\dfrac{3}{4}$ $\dfrac{7}{8}$ $\dfrac{15}{16}$ |

Fractions: Workout

Find the missing numbers.

$\dfrac{4}{6} = \dfrac{2}{3}$ $\dfrac{2}{5} = \dfrac{6}{15}$ $\dfrac{2}{3} = \dfrac{14}{21}$ $\dfrac{2}{3} = \dfrac{16}{24}$

$\dfrac{6}{8} = \dfrac{3}{4}$ $\dfrac{5}{6} = \dfrac{15}{18}$ $\dfrac{12}{15} = \dfrac{4}{5}$ $\dfrac{5}{7} = \dfrac{50}{70}$

$\dfrac{6}{9} = \dfrac{2}{3}$ $\dfrac{15}{25} = \dfrac{3}{5}$ $\dfrac{3}{4} = \dfrac{21}{28}$ $\dfrac{27}{45} = \dfrac{3}{5}$

$\dfrac{2}{6} = \dfrac{4}{12}$ $\dfrac{6}{9} = \dfrac{12}{18}$ $\dfrac{20}{24} = \dfrac{5}{6}$ $\dfrac{4}{6} = \dfrac{16}{24}$

Plotting Fractions Game

You need:
1 - 9 Cards (at the back of the pack)
A blank 0 - 1 number line

To play:
Shuffle the cards and put them in a deck face down.
Take it in turns to turn over two cards.
Use the smaller number as the numerator and the larger number as the denominator to make a proper fraction.
Plot your fraction approximately on the number line, convincing your opponent how you know where to plot it.

I have turned over $\frac{3}{5}$ so I plot it between $\frac{1}{2}$ and $\frac{7}{10}$ because it is larger than $\frac{1}{2}$ but smaller than $\frac{7}{10}$
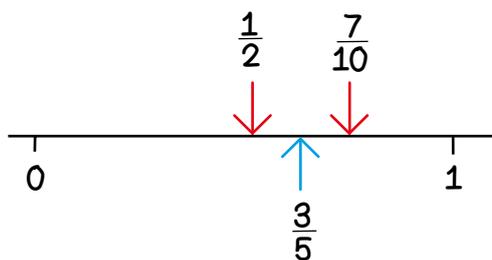
Place the cards back into the deck.

To win:
The winner is the first player to plot 4 fractions without any of their opponent's fractions in between.

Missing Number Workout

Place digits in the empty boxes so that each set of fractions is in order from smallest to largest.
Complete each set in several different ways.

Possible Solution

$$\frac{1}{8} \,, \frac{3}{4} \,, \frac{7}{8}$$

$$\frac{2}{5} \,, \frac{3}{5} \,, \frac{9}{10}$$

$$\frac{3}{12} \,, \frac{1}{3} \,, \frac{4}{6}$$

Are there any boxes that it is impossible to put a 5 in?
Why?

Are there any boxes that could have any of the digits in them?

Now complete it using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 once each.
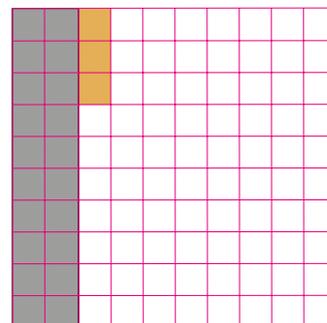
Squares Challenge

Colin is challenging Coco to a decimal fraction match. They play the challenge using a 100 board to represent one whole.

Pile of tenths   Pile of hundredths

Coco chooses five pieces in total from the pile of tenths and the pile of hundredths and places them on the whole one. She states the decimal number she has made.
"I have made 0.23."

Colin states Coco's decimal as a fraction and a percentage.
"That is equal to twenty three hundredths and twenty three percent."

He clears the board. Colin then picks five pieces of his own and places them on the whole. He states the decimal. Coco states the equivalent fraction and percentage.

Investigate all the possible decimals they can make. What do you notice?

$0.5 = 50\% = \frac{50}{100}$ or $\frac{1}{2}$

$0.41 = 41\% = \frac{41}{100}$

$0.32 = 32\% = \frac{32}{100}$

$0.23 = 23\% = \frac{23}{100}$

$0.14 = 14\% = \frac{14}{100}$

$0.05 = 5\% = \frac{5}{100}$

Investigate the decimals they can make if they pick six pieces each time.

Word Problem Workout

Coco climbs $\frac{3}{5}$ of the way up the mountain.
Colin climbs 65% of the way up the mountain.
Who has climbed further up the mountain?

Colin

Colin eats 75% of his cake. Coco eats $\frac{7}{8}$ of her cake.
Who has eaten more of their cake?

Coco

Coco has three scarves. The blue one is $\frac{3}{4}$ m long.
The red scarf is 0.8m long and the green scarf is $\frac{3}{5}$ m long.
Put the scarves in order of length, from shortest to longest.

green, blue, red

In a maths test Coco gets 18 out of 20 correct.
Colin gets 85% correct. Who has the higher mark?

Coco

Coco is making a cake.
The cake needs $\frac{2}{5}$ kg of flour. It needs 25% of a kilogram of margarine and 0.35kg of sugar.
Put the three ingredients in order of the amount needed, from least to most.

margarine, sugar, flour

Create your own problems to compare or order fractions, decimals and percentages.

1 - 20 Workout

Using the digits from today's date create all the numbers from 1 - 20. You can use any or all of the four operations. You must use all the digits every time.

1	11
2	12
3	13
4	14
5	15
6	16
7	17
8	18
9	19
10	20

Cards for the Games

1	2	3
4	5	6
7	8	9