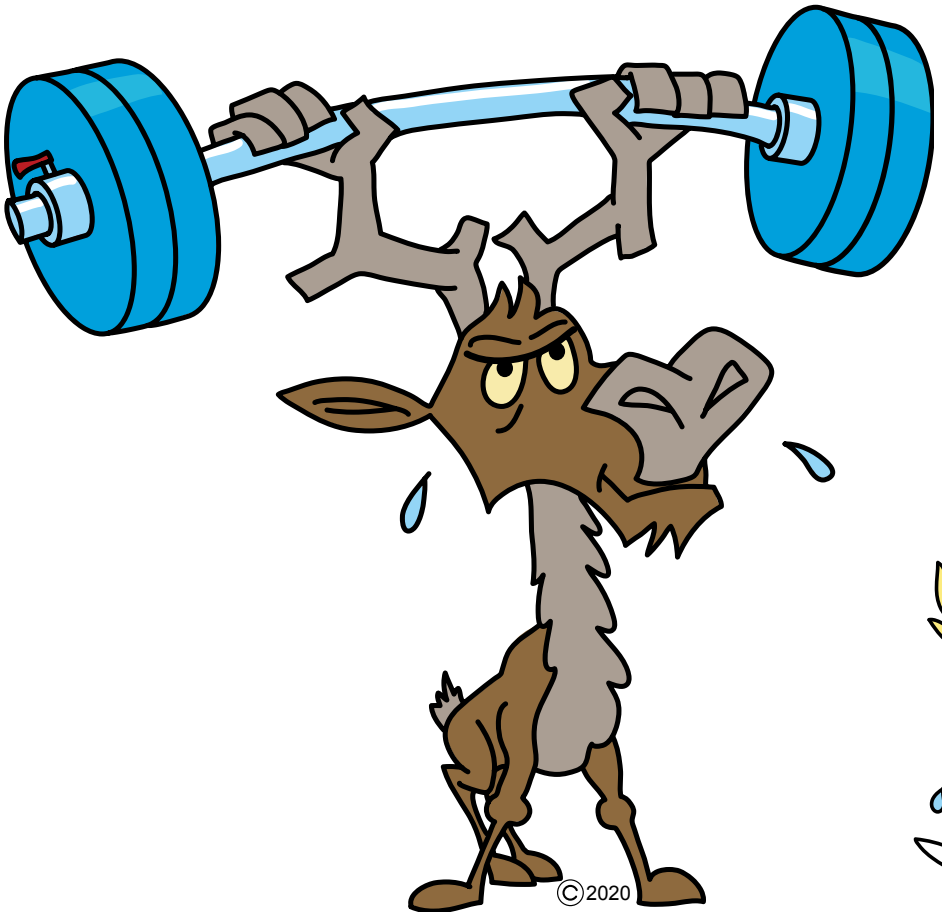
Colin and Coco's Daily Maths Workout

Workout 6.1 & 6.2

Answers



Workout A

Fraction Workout

You may need to work these out on another piece of paper.

$\frac{1}{3}+\frac{1}{4}=$ $\frac{7}{12}$	$\frac{2}{3}+\frac{1}{4}=$ $\frac{11}{12}$	$\frac{2}{3}-\frac{1}{4}=$ $\frac{5}{12}$
$\frac{1}{5}+\frac{1}{4}=$ $\frac{9}{20}$	$\frac{2}{5}+\frac{1}{4}=$ $\frac{13}{20}$	$\frac{2}{5}-\frac{1}{4}=$ $\frac{3}{20}$
$\frac{1}{3}+\frac{1}{5}=$ $\frac{8}{15}$	$\frac{2}{3}-\frac{1}{5}=$ $\frac{7}{15}$	$\frac{2}{3}-\frac{3}{5}=$ $\frac{1}{15}$
$\frac{1}{3}+\frac{1}{2}=$ $\frac{5}{6}$	$\frac{1}{3}-\frac{1}{4}=$ $\frac{1}{12}$	$\frac{3}{4}-\frac{2}{5}=$ $\frac{7}{20}$

Workout B

Fraction Workout

You may need to work these out on another piece of paper.

$3\frac{4}{8}$ $=1\frac{3}{8}+2\frac{1}{8}$	$5\frac{7}{20}$ $=2\frac{3}{5}+2\frac{3}{4}$	$1\frac{7}{12}$ $=2\frac{5}{6}-1\frac{1}{4}$
$3\frac{7}{8}$ $=1\frac{1}{8}+2\frac{3}{4}$	$4\frac{1}{15}$ $=1\frac{2}{3}+2\frac{2}{5}$	$\frac{11}{15}$ $=2\frac{2}{5}-1\frac{2}{3}$
$3\frac{5}{6}$ $=2\frac{1}{6}+1\frac{2}{3}$	$1\frac{5}{6}$ $=2\frac{5}{6}-1\frac{1}{6}$	$1\frac{5}{6}$ $=3\frac{1}{6}-1\frac{1}{3}$
$3\frac{19}{20}$ $=1\frac{1}{5}+2\frac{3}{4}$	$\frac{4}{5}$ $=2\frac{2}{5}-1\frac{3}{5}$	$\frac{13}{20}$ $=2\frac{2}{5}-1\frac{3}{4}$

Workout C

Fraction Workout

You may need to work these out on another piece of paper.

$3\frac{3}{5}+2\frac{1}{4}=$ $5\frac{17}{20}$	$2\frac{2}{5}+1\frac{3}{4}=$ $4\frac{3}{20}$	$3\frac{2}{3}+2\frac{3}{4}=$ $6\frac{5}{12}$
$2\frac{2}{3}+1\frac{1}{5}=$ $3\frac{13}{15}$	$2\frac{2}{3}+2\frac{4}{5}=$ $5\frac{7}{15}$	$3\frac{2}{3}+2\frac{2}{7}=$ $5\frac{20}{21}$
$3\frac{4}{6}-1\frac{1}{6}=$ $2\frac{3}{6}$	$2\frac{5}{6}-1\frac{1}{3}=$ $1\frac{3}{6}$	$2\frac{5}{8}-1\frac{3}{4}=$ $\frac{7}{8}$
$2\frac{3}{5}-1\frac{4}{5}=$ $\frac{4}{5}$	$3\frac{1}{3}-1\frac{2}{3}=$ $1\frac{2}{3}$	$3\frac{2}{5}-1\frac{3}{4}=$ $1\frac{13}{20}$

Biggest Wins - A Fraction Game

You need:
1 - 10 cards (At the back of the pack)

To play:
Shuffle the cards.
Deal four cards to each player.

Each player makes two proper fractions then adds them to find a total.

The player with the largest total scores a point.

To win:
The winner is the first player to score five points.

Play again, but make improper fractions this time.

Missing Number Workout

Workout E

Solve each calculation in at least four different ways.
(The missing numbers could have 2 digits)

Possible Solution

$$2\frac{1}{\boxed{2}} + 2\frac{1}{\boxed{4}} = 4\frac{3}{\boxed{4}}$$

$$2\frac{1}{\boxed{3}} + 2\frac{1}{\boxed{9}} = 4\frac{4}{\boxed{9}}$$

Find the missing digits.

Solve each calculation in several ways if possible.

$$3\frac{\boxed{1}}{6} - 1\frac{2}{\boxed{3}} = 1\frac{1}{\boxed{2}}$$

$$3\frac{\boxed{4}}{\boxed{5}} - 1\frac{\boxed{9}}{10} = 1\frac{9}{1\boxed{0}}$$

$$2\frac{3}{\boxed{6}} + \frac{\boxed{7}}{\boxed{8}} = 3\frac{3}{8}$$

Solve all calculations together using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 once each.

Book Shelf Challenge

Workout F

Colin is sorting his books out and is filling shelves in a very organised way.
The table shows the type of books and the fraction of shelves that are filled.

Books	Fraction of shelves filled
Stories about explorers	$1\frac{2}{3}$
Astronomy books	$1\frac{3}{4}$
Recipe books	$1\frac{4}{5}$
Keep Fit books	$1\frac{5}{6}$

What is the difference between the fractions of shelves filled by different types of books?

What do you notice?

		Difference
Stories	Astronomy	$\frac{1}{12}$
Stories	Recipe	$\frac{2}{15}$
Stories	Keep Fit	$\frac{1}{6}$
Astronomy	Recipe	$\frac{1}{20}$
Astronomy	Keep Fit	$\frac{1}{12}$
Recipe	Keep Fit	$\frac{1}{30}$

Investigate further:

Possible Solutions

Find two mixed numbers with different denominators that have a difference of

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

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

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

Word Problem Workout

Workout G

Colin is having a party.
He has $\frac{3}{5}$ kg of Caribou nuts in one bag and $\frac{3}{4}$ kg of Caribou nuts in another bag.
What weight of Caribou nuts does he have in total? $1\frac{7}{20}$

Colin has taken up jogging.
He jogs $3\frac{3}{4}$ km on Saturday and $2\frac{2}{3}$km on Sunday.
How far did he jog in total? $6\frac{3}{12}$
How much further did he jog on Saturday than Sunday? $1\frac{1}{12}$

Colin weighs $165\frac{2}{3}$kg.
Coco weighs $\frac{5}{8}$ kg.
What is the difference between their weights? $165\frac{1}{24}$

Colin has a long journey to make.
He travels $\frac{3}{8}$ of the journey, has a break then travels $\frac{1}{3}$ of the journey.
What fraction of the journey does he have left to travel? $\frac{7}{24}$

Coco is making a fruit punch. She pours in $1\frac{2}{3}$ litres of Tropical juice, $\frac{4}{5}$ litres of Lemonade.
How much fruit punch has Coco made so far? $2\frac{7}{15}$
How much more Tropical Juice than lemonade does she use? $\frac{13}{15}$

Create your own problem for $2\frac{1}{4}$ subtract $1\frac{1}{3}$

1 - 20 Workout

Workout H

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.

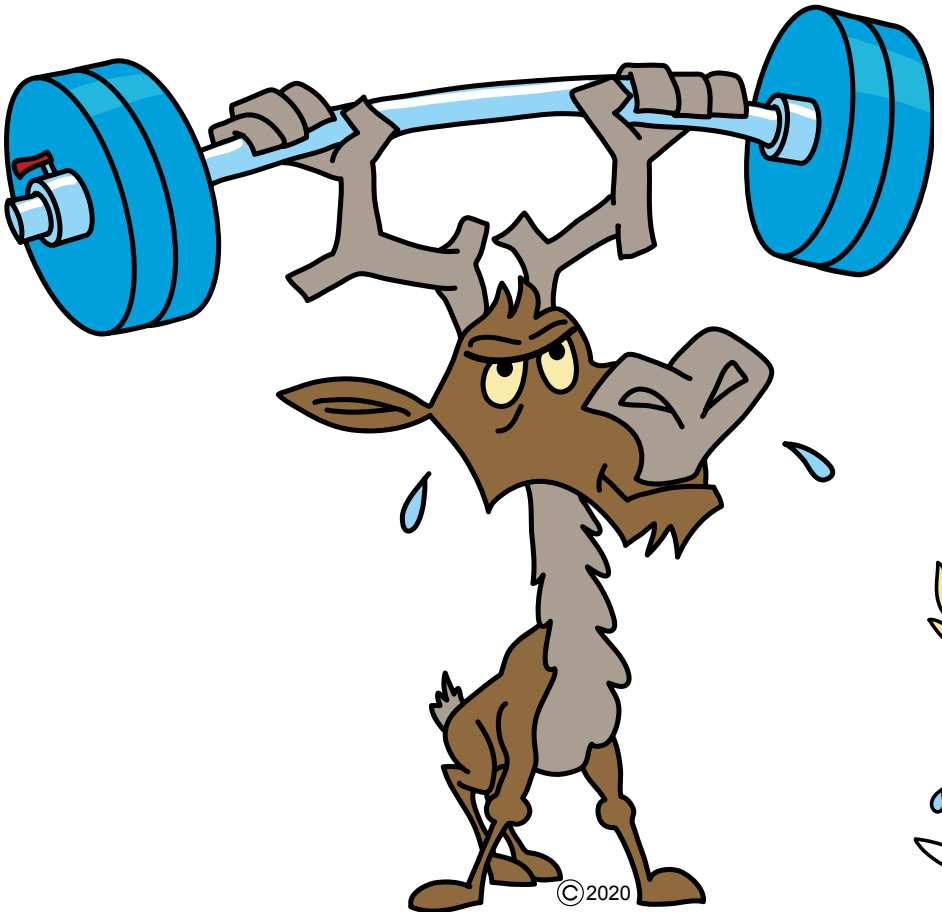
Example: 27/3/20 (27th March)

1		11	
2		12	
3		13	$7 \times 2 = 14$ $3 - 2 - 0 = 1$ $14 - 1 = 13$
4	$7 + 2 - 3 - 2 - 0 = 4$	14	
5		15	
6	$7 + 3 - 2 - 2 - 0 = 6$	16	
7		17	
8		18	
9	$7 \times 2 - 3 - 2 - 0 = 9$	19	
10		20	

Colin and Coco's Daily Maths Workout

Workout 6.2

Fractions, Decimals and Percentages



Fraction, Decimal, Percentage Workout

Workout A

Decimal to fraction	Fraction to decimal	Fraction to percentage
$0.5 = \frac{1}{2}$	$\frac{3}{4} = 0.75$	$\frac{1}{4} = 25\%$
$0.25 = \frac{1}{4}$	$\frac{3}{5} = 0.6$	$\frac{2}{5} = 40\%$
$0.4 = \frac{4}{10}$	$\frac{3}{10} = 0.3$	$\frac{7}{10} = 70\%$
$0.1 = \frac{1}{10}$	$\frac{4}{5} = 0.8$	$\frac{3}{4} = 75\%$

Fraction, Decimal, Percentage Workout

Workout B

Decimal to fraction	Fraction to decimal	Fraction to percentage
$\frac{3}{10} = 0.3$	$0.8 = \frac{4}{5}$	$40\% = \frac{2}{5}$
$\frac{45}{100} = 0.45$	$0.9 = \frac{9}{10}$	$30\% = \frac{3}{10}$
$\frac{17}{100} = 0.17$	$0.31 = \frac{31}{100}$	$53\% = \frac{53}{100}$
$\frac{8}{100} = 0.08$	$0.04 = \frac{4}{100}$	$7\% = \frac{7}{100}$

Fraction, Decimal, Percentage Workout

Workout C

Insert >, = or <

$\frac{1}{9}$ < $\frac{1}{8}$	$\frac{5}{6}$ > $\frac{2}{3}$	$\frac{9}{10}$ > $\frac{9}{11}$
$\frac{9}{10}$ > $\frac{4}{5}$	$\frac{5}{6}$ > $\frac{5}{7}$	$\frac{2}{3}$ > $\frac{4}{7}$
$\frac{4}{5}$ = 0.8	$\frac{7}{50}$ = 0.14	$\frac{2}{5}$ > 25%
0.7 < $\frac{3}{4}$	0.07 < 60%	0.3 < 35%

Plot It - A Fraction Game

Workout D

You need:
1 - 10 cards (At the back of the pack)
0 - 1 blank number line

To play:
Shuffle the cards and place them in a deck face down.

Player 1: Pick two cards from anywhere in the deck.

Make a proper fraction. Plot your fraction approximately on the number line.

Replace the cards in the deck and shuffle it.

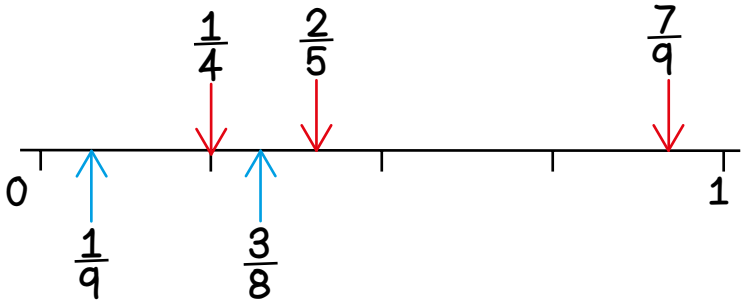
Player 2: Pick two cards from anywhere in the deck.

Make a proper fraction. Plot your fraction approximately on the number line.

Continue taking turns to make and plot fractions.

To win:
The winner is the first player to plot four points without their opponent's points in between.

For example: After 3 turns for player 1 and 2 turns for player 2 it could look like the diagram below.



Missing Number Workout

Workout E

Find the missing digits.

$$\frac{A}{B} < \frac{2}{3}$$

A and B are digits.
A is an even number, B is an odd number.

Find all the possible solutions. $\frac{2}{5}$ $\frac{2}{7}$ $\frac{4}{7}$ $\frac{2}{9}$ $\frac{4}{9}$

Find the missing numerators and denominators in the following fractions.
The fractions are in order from smallest to largest.
Each letter represents a different number from 1 to 10.

$$\frac{A}{B} \quad \frac{C}{D} \quad \frac{E}{F} \quad \frac{G}{H} \quad \frac{I}{J}$$

Possible Solution

$\frac{1}{10}$ $\frac{2}{9}$ $\frac{3}{8}$ $\frac{4}{7}$ $\frac{5}{6}$

Solve this puzzle in several different ways.

Another Solution

$\frac{1}{9}$ $\frac{6}{10}$ $\frac{2}{3}$ $\frac{4}{5}$ $\frac{7}{8}$

Comparing Fractions, Decimal and Percentages Workout

Put a different unit fraction in each square so that the fractions get smaller as you travel right and down across the grid. (Unit fractions have 1 as their numerator.)

Possible Solution

Largest →

$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{6}$
$\frac{1}{4}$	$\frac{1}{5}$	$\frac{1}{7}$
$\frac{1}{8}$	$\frac{1}{9}$	$\frac{1}{10}$

↓ Smallest

Fill the grid as described, so that the fractions and decimals get smaller as you travel right and down across the grid.

Possible Solution

Largest →

$\frac{3}{4}$	$\frac{3}{5}$	$\frac{3}{7}$
0.5	0.32	0.31
$\frac{2}{8}$	$\frac{2}{9}$	$\frac{2}{10}$

Three non-unit fractions with different denominators in this row.

Three decimals in this row.

Three non-unit fractions with different denominators in this row.

↓ Smallest

Word Problem Workout

Workout G

For the following four statements, in each case work out which you would rather and say why.

Have $\frac{2}{3}$kg, $\frac{4}{7}$kg or $\frac{5}{9}$kg of choclate

Depends on the reason, e.g.
I prefer $\frac{5}{9}$kg because I don't like chocolate

Run $\frac{2}{8}$km, $\frac{3}{7}$km or $\frac{2}{9}$km.

I prefer $\frac{3}{7}$km because I like to run

etc

Drink $\frac{4}{9}$ litre, $\frac{1}{3}$ litre or $\frac{2}{5}$ litre of orange juice.

Read $\frac{2}{5}$, $\frac{1}{3}$ or 37% of a good book.

On the packet of Colin's favourite biscuits it lists the nutrition information.
Sugars 26%.
Fat 3g per 12g biscuit.
Which is there more of, sugars or fat? Sugars

Two shops are having a sale.
Shop A advertises 35% off.
Shop B advertises $\frac{1}{3}$ off.
Which shop offers the better deal and how do you know? 35% because $\frac{1}{3} = 33\frac{1}{3}\%$

Colin and Coco sit the same test.
Colin gets 80%.
Coco gets 17 out of 20.
Who had the better test result? Coco

Create your own problems for 30% compared to $\frac{1}{3}$

1 - 20 Workout

Workout H

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.

Example: 03/4/20 (3rd April)

1		11	
2		12	
3		13	
4		14	$3 \times 4 = 12$ $2 + 0 = 2$ $12 + 2 = 14$
5	$3 + 4 - 2 + 0 = 5$	15	
6		16	
7		17	
8		18	
9	$3 + 4 + 2 + 0 = 9$	19	
10		20	

1 - 10 Cards

1

2

3

4

5

6

7

8

9

10