



Monday 10.1.22

MPI Simplifying fractions



<p>Find the highest common factor to simplify the fractions below.</p> <p>A. <math>\frac{35}{42} (\div \square) = \frac{\square}{\square}</math></p> <p>B. <math>\frac{24}{36} (\div \square) = \frac{\square}{\square}</math></p>	<p>Find the highest common factor to simplify the fractions below.</p> <p>A. <math>\frac{48}{60} (\div \square) = \frac{\square}{\square}</math></p> <p>B. <math>\frac{36}{80} (\div \square) = \frac{\square}{\square}</math></p>
<p>Match each fraction to its simplified version.</p> <p>A. <math>\frac{18}{50}</math>                      <math>\frac{5}{12}</math></p> <p>B. <math>\frac{26}{40}</math>                      <math>\frac{9}{25}</math></p> <p>C. <math>\frac{40}{96}</math>                      <math>\frac{13}{20}</math></p>	<p>Match each fraction to its simplified version.</p> <p>A. <math>\frac{84}{96}</math>                      <math>\frac{9}{25}</math></p> <p>B. <math>\frac{36}{42}</math>                      <math>\frac{7}{8}</math></p> <p>C. <math>\frac{27}{75}</math>                      <math>\frac{6}{7}</math></p>
<p>True or false? The following fractions are reduced to their simplest forms.</p> <p>A. 49 tulips out of 63 are red. This is <math>\frac{7}{8}</math> when expressed as a fraction.</p> <p>B. 33 children out of 75 are left handed. This is <math>\frac{11}{25}</math> when expressed as a fraction.</p>	<p>True or false? The following fractions are reduced to their simplest forms.</p> <p>A. 35 dogs out of 100 are brown. This is <math>\frac{7}{20}</math> when expressed as a fraction.</p> <p>B. Toby scored 32 out of 72 in a test. When expressed as a fraction, this is <math>\frac{2}{9}</math>.</p>
<p>Circle the fractions shown in their simplest form.</p> <p><math>\frac{9}{24}</math>                      <math>\frac{17}{20}</math>                      <math>\frac{3}{15}</math></p> <p><math>\frac{5}{17}</math>                      <math>\frac{12}{33}</math></p>	<p>Circle the fractions shown in their simplest form.</p> <p><math>\frac{13}{50}</math>                      <math>\frac{32}{40}</math>                      <math>\frac{3}{15}</math></p> <p><math>\frac{10}{14}</math>                      <math>\frac{19}{75}</math></p>



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MPI Simplifying fractions



1. Paul is simplifying fractions but he has spilt paint over his work.

A.  $\frac{150}{6}$

B.  $\frac{160}{8} = \frac{8}{8}$

C.  $\frac{1}{12} = \frac{12}{12}$   $\frac{1}{12} = \frac{12}{12}$

D.  $\frac{24}{4} = \frac{4}{4}$   $\frac{24}{4} = \frac{4}{4}$

E.  $\frac{18}{4} = \frac{4}{4}$   $\frac{18}{4} = \frac{4}{4}$

F.  $\frac{3}{9} = \frac{9}{9}$   $\frac{3}{9} = \frac{9}{9}$

Investigate what the missing numbers could be.

Investigate which fractions below can be simplified.

$\frac{120}{240}$	$\frac{140}{160}$	$\frac{36}{49}$	$\frac{64}{108}$	$\frac{56}{81}$	$\frac{150}{600}$
$\frac{7}{150}$	$\frac{75}{99}$	$\frac{121}{144}$	$\frac{42}{55}$	$\frac{63}{84}$	$\frac{81}{90}$

For any fractions that can't be simplified, explore alternative numerators so that the fraction could be simplified.



Tuesday 11.1.22

MPI Dividing with remainders as fractions and decimals

Spicy



- 1) Lay out the calculation in your book
- 2) Use either short or long division to solve the calculation
- 3) If there are remainders, show the three different ways you could show these.

$60 \div 20$

$540 \div 60$

$$20 \overline{) 63}$$

$$60 \overline{) 555}$$

$63 \div 20$

$97 \div 40$

$93 \div 70$



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Tuesday 11.1.22

MPI Dividing with remainders as fractions and decimals

Extra Spicy



For each question, write the remainders as decimals and fractions.

- 1) Elliot cuts a 636cm long string into 16 equal parts. What is the length of each part?
- 2) 7356ml of lemonade is put into 24 bottles equally. How much lemonade is there in each bottle?
- 3) Is it possible to pack 1400kg of flour in bags of 12kg without having any left over?

4) Explain why all of these calculations have a '2' in the tenths place and a '5' in the hundredths place

$205 \div 20$

$305 \div 20$

$405 \div 20$

$505 \div 20$

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5) Fill in the missing digits

$$\begin{array}{r}
 \phantom{24} \phantom{)} \phantom{0} \phantom{0} \phantom{0} \phantom{.} \phantom{7} \phantom{5} \\
 \phantom{24} \phantom{)} \phantom{0} \phantom{0} \phantom{0} \phantom{.} \phantom{7} \phantom{5} \\
 \hline
 24 \phantom{)} \phantom{0} \phantom{0} \phantom{0} \phantom{.} \phantom{7} \phantom{5}
 \end{array}$$

6) Using your answer to  $115 \div 20$  can you predict what digits will appear in the tenths and hundredths places of the quotients of these calculations?

$215 \div 20$

$315 \div 20$

$415 \div 20$



Wednesday 12.1.22

MPI Dividing with remainders as fractions and decimals

Spicy



- 1) Complete the calculations. For each calculation, show the remainder in three different ways

$$525 \div 42$$

$$930 \div 40$$

$$1026 \div 24$$

$$307 \div 25$$

- 2) There are 535g of raisins. They are packed into snack-boxes each weighing 52g. How many snack-boxes can be made?  
3) £1431 is shared equally between fifty people. How much does each person get?



Wednesday 12.1.22

Dividing with remainders as fractions and decimals

Spicy



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Wednesday 24.3.21

Practicing solving division calculations

Spicy



A large paddling pool holds 530 litres of water. Exactly how many 15-litre buckets are needed to fill it?

Azra takes a 14km train journey to school each day. This week, Azra will visit her grandma, taking a 175km train journey. How many times the distance of her trip to school is this?

Which two calculations don't have a remainder in their answer?

250 ÷ 24

480 ÷ 24

4,900 ÷ 12

3,636 ÷ 24

481 ÷ 24

$$18 \overline{) 4005}$$

18
36
54
72
90
108
126
144

For a school trip, each coach holds 42 passengers. If there are 512 children and teachers in total, how many coaches does the school need to book?



Correct or incorrect? Fix the mistakes

**Example A:**

$$\begin{array}{r}
 240 \\
 14 \overline{) 3514} \\
 \underline{28} \phantom{1} \phantom{4} \\
 71 \phantom{4} \\
 \underline{70} \phantom{4} \\
 14 \phantom{4} \\
 \underline{14} \\
 0
 \end{array}$$

**Example B:**

$$\begin{array}{r}
 342 \\
 14 \overline{) 4788} \\
 \underline{42} \phantom{8} \phantom{8} \\
 58 \phantom{8} \\
 \underline{56} \phantom{8} \\
 28 \phantom{8} \\
 \underline{28} \\
 0
 \end{array}$$

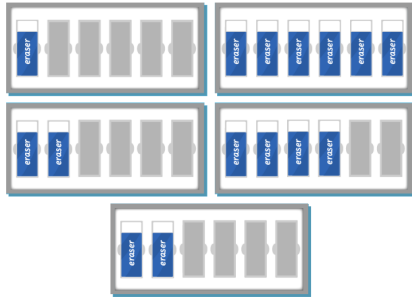
**Example C:**

$$\begin{array}{r}
 321 \\
 14 \overline{) 5494} \\
 \underline{42} \phantom{9} \phantom{4} \\
 29 \phantom{4} \\
 \underline{28} \phantom{4} \\
 14 \phantom{4} \\
 \underline{14} \\
 0
 \end{array}$$



Thursday 13.1.22  
Finding the mean average

Spicy



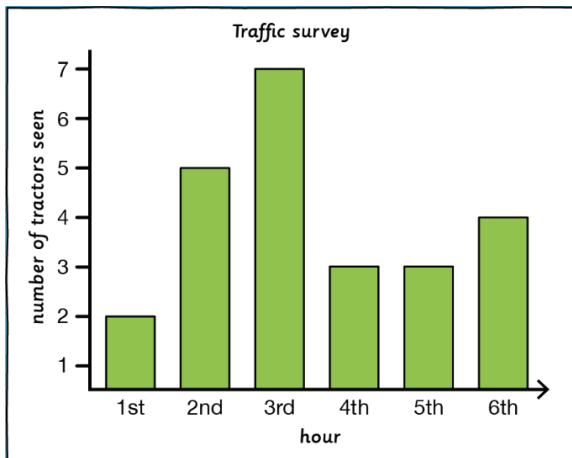
If each pack had the same number of rubbers in, how many rubbers would be in each pack?

rubbers

A group of friends collect strawberries. What is the mean number of strawberries collected?

strawberries

	Adam	Matthew	Michael	Mark	Rob
strawberries collected	14	8	13	11	9



The number of tractors seen during a traffic survey is recorded in a bar chart. What is the mean number of tractors seen in an hour?

tractors

This table shows the number of children in each year group with allergies.

What is the mean number of children with allergies?

Year group	Number of children
Year 1	15
Year 2	17
Year 3	12
Year 4	12



Draw lines matching the information on the left to the information on the right

<p>'The mean number of pieces of fruit eaten is 4 per person.'</p>	<p>'8 people eat some fruit. The total number of pieces of fruit eaten is 24.'</p>
<p><math>24 \div 3 = 8</math></p>	
<p>'The mean is 8.'</p>	<p>'6 people eat some fruit. The total number of pieces of fruit eaten is 24.'</p>
<p>'The mean is a square number and the total is a square number.'</p>	
<p>'The mean number of pieces of fruit eaten is 3 per person.'</p>	
<p>'The mean is 6.'</p>	<p>'Dan eats 10 grapes, Jon eats 9 cherries and Imra eats 5 plums.'</p>

Think hard: George has twelve pens. Jess has half as many pens as George. Andy has three times as many pens as Jess. What is the mean number of pens?

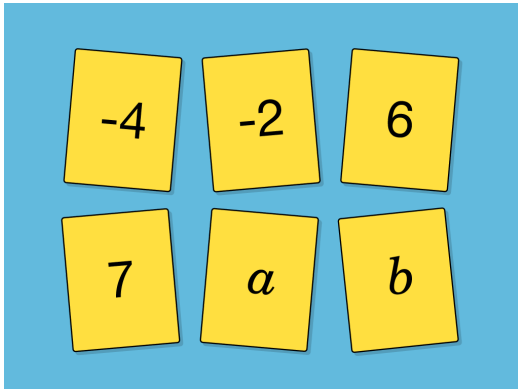




Thursday 13.1.22

### BONUS CHALLENGE

There are 19 children and a teacher in a class. The mean age is 11. There are nine 10-year-olds and the rest of the class are 9 years old. How old is the class teacher?



Use the following clues to find the value of  $b$ :

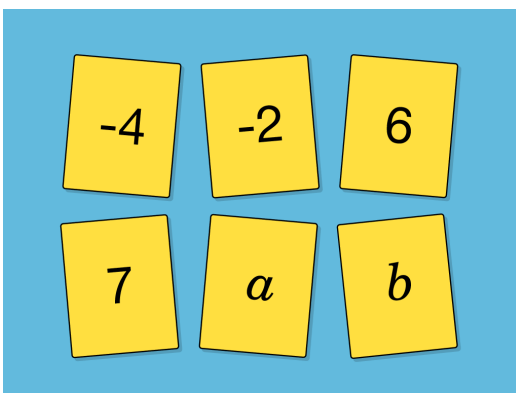
- $a$  and  $b$  are both whole numbers
- the mean of all six cards is 3.5
- the value of  $b$  is six times greater than  $a$



Thursday 13.1.22

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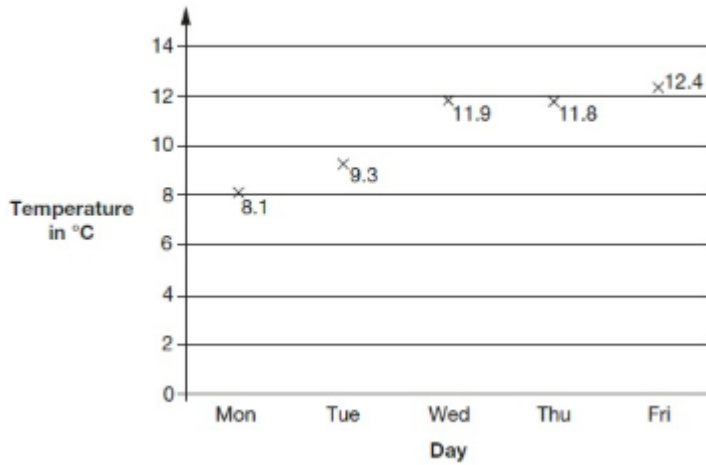
Friday 14.1.22

### Finding the mean average

Spicy



This graph shows the maximum temperature for five days.



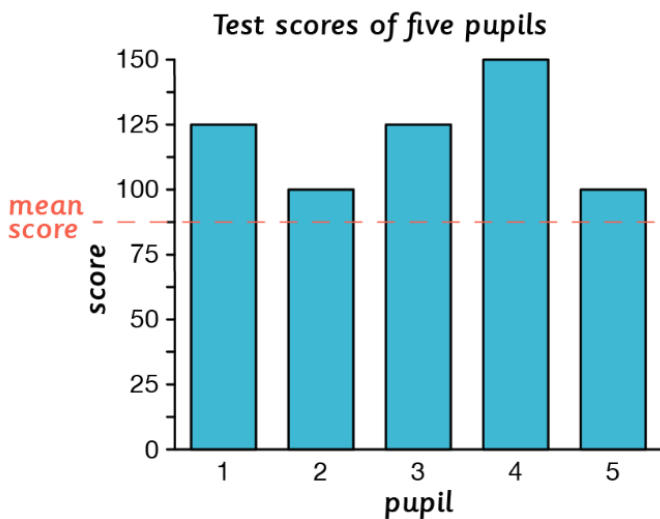
What was the mean maximum temperature, to one decimal place?

Show your method

°C

Amir	Billy	Carla	Dean
13	?	15	14

The mean time for a 3km race is 14 minutes.  
What could Billy's time be?

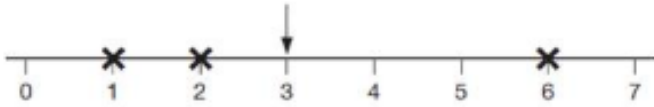


Mr Dilshank plots five test scores on a bar chart and says that everyone has achieved a higher score than the mean score.

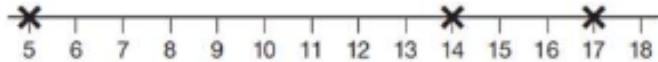
Is the mean score shown correctly? Explain your answer.



The arrow below points to the **mean** of the three numbers shown by crosses.



(a) Draw an arrow that points to the mean of the three numbers shown below.



1 mark

(b) The arrow below points to the mean of three numbers.

One of the numbers is missing.

Draw a cross to show the position of the missing number.



1 mark

Three apples have a **mean** (average) mass of 100 grams.

The largest apple is removed.

The **mean** mass of the remaining two apples is 70 grams.



Three teams are taking part in the heats of a 4 × 100 m relay race competition on Sports Day. If the mean average time of the four runners in a team is less than 30 seconds, the team will be selected for the finals.

At the start of the last leg of the relay race, the times (in seconds) of each teams' first three runners are:

Team Peacock: 27, 29, 31

Team Farah: 45, 43, 37

Team Ennis: 29, 30, 25

Which of the teams have the best chance of being selected?

Explain your reasoning.

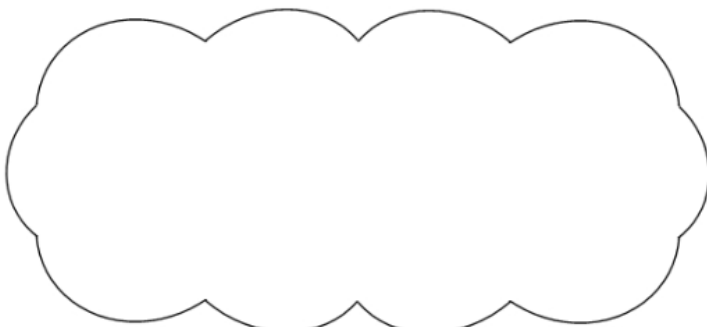
What is the mass of the largest apple?

Monday	Tuesday	Wednesday	Thursday
14 km	23 km	13 km	13 km

Megan says,

**'My average for the first four days is more than 15 km.'**

Explain why Megan is correct.




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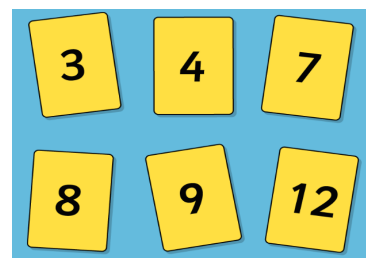
Friday 14.1.22

BONUS CHALLENGE

Moe records how many hours of television he watches each evening. On which **two** days did Moe watch more television than his mean time?

	Mon	Tues	Wed	Thurs	Fri	total	mean
Moe	1	2	0.5	1	4		

Which **four** of these numbers have a mean of 5.75?



Friday 14.1.22

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