Learning pack page 1

Roman numerals

Fluency

1. Copy and complete the sequences. below

a)	CIII		CV	
b)		CCLV		CCLVII
c)	DXXIV		DXXVI	

2. Use < > or = to complete the statements

CDLV ☐ 355

699 ☐ DCXCIX

CDXXVII ☐ 430

Solve it!

3 **Complete the calculations. Write the answers in Roman numerals.**

485 – CCXV = ☐

241 + DCXXXIV = ☐

CMXI – 303 = ☐

4 **Arrange the cards below to create different Roman numerals. Each card may only be used once.**

I	V	C	X

Find all the possibilities.

Challenge

5

In Roman numerals, each letter represents a value. To read Roman numerals you add up the values of the letters used.

Find an example of a Roman numeral which proves that Lily is incorrect.

Share your answer with a partner.
Write an explanation of why Lily is incorrect.

Answers:

1. a) CIII, CIV, CV, CVI
   b) CCLIV, CCLV, CCLVI, CCLVII
   c) DXXIV, DXXV, DXXVI, DXXVII

2. CDLV > 355
   699 = DCXCIX
   CDXXVII < 430

3. 485 – CCXV = 270
   241 + DCXXXIV = 875
   CMXI – 303 = 608

4. Make sure you create all the possibilities and write them in numerals as well.
5. When a lower denominator comes first then you need to subtract. E.g. IX = 1 less than 10 = 9

Learning pack page 2

Rounding

Fluency

1. Round 7,524
   to the nearest 10
   to the nearest 100
   to the nearest 1000

2. Round 82,169
   to the nearest 10
   to the nearest 100
   to the nearest 1000

3. Round 96,723
   to the nearest 10
   to the nearest 100
   to the nearest 1000

4. Round 629,259
   to the nearest 10
   to the nearest 100
   to the nearest 1000

5. Round 471,561
   to the nearest 10
   to the nearest 100
   to the nearest 1000

6. Round 123,456
   to the nearest 10
   to the nearest 100
   to the nearest 1000

Solve it!

7 **Frances is thinking of 2 numbers.**

Their difference is 235.

Both numbers have 3 digits and are multiples of 5.

Both numbers round up to 1,000 as the nearest thousand.

Find 3 pairs of numbers Frances could be thinking of.

8 **Amal is thinking of 2 numbers.**

Their difference is 250.

Both numbers have 4 digits and 7 ones.

Both numbers round up to 6,000 as the nearest thousand.

Find 3 pairs of numbers Amal could be thinking of.

Challenge!

9 **Tom has crossed the maze below using numbers which round to the nearest 100 to 1,900.**
Explain where Tom has made a mistake.

1,861	1,898	1,849	1,909	1,999
1,804	1,888	1,949	1,938	1,848
1,882	1,806	1,950	1,926	1,962
1,967	1,857	1,953	1,875	1,821
1,809	1,957	1,888	1,870	1,954
1,894	1,901	1,999	1,942	1,860

Answers

Fluency

1. Round 7,524
   N10 – 7,520
   N100 – 7,500
   N1000 – 8,000

2. Round 82,169
   N10 – 82,170
   N100 – 82,200
   N1000 – 82,000

3. Round 96,723
   N10 – 96,720
   N100 – 96,700
   N1000 – 97,000

4. Round 629,259
   N10 – 629, 260
   N100 – 629,300
   N1000 – 629,000

5. Round 471,561
   N10 – 471, 560
   N100 – 471,600
   N1000 – 472,000

6. Round 123,456
   N10 – 123,460
   N100 – 123,500
   N1000 – 123,000

Solve it!

7. Various answers, for example:
2,005 and 2,405; 2,085 and 2,485;
2,015 and 2,415.

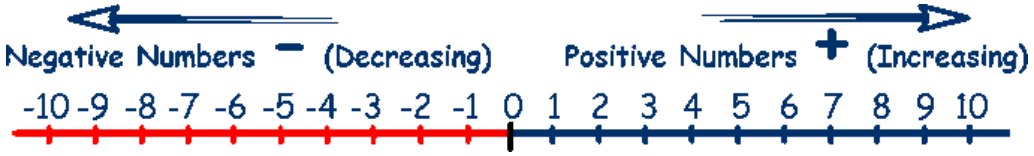
8. Various answers, for example:
5,557 and 5,807; 5,997 and 5,747;
5,707 and 5,957.

Challenge

9 . Explanation that recognises that 1,954 should round up to 2,000 rather than 1,900 and the alternative route given – 1942 and 1,860.

Learning pack page 3

Negative numbers



Fluency:

1. -3 +5
2. 1-9
3. -2 -5
4. -3 +8
5. -3 -8
6. -5 -9
7. The temperature is 3 degrees it falls 5 degrees what is the temperature now?
8. If start on -1 and can move 4 spaces either way. Which two numbers could it be?
9. Put these in order from the smallest
   2˚C, -8˚C, -1˚C, -6˚C, -4˚C

Solve it!

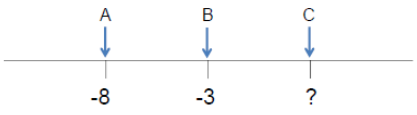
Which is larger ?

1. -8˚C or 8˚C
2. -16˚C or -17˚C
3. -5˚C or -6˚C
4. Put in order from smallest to biggest 6˚C, 10˚C, -15˚C, -11˚C, 14˚C
5. 16˚C, 18˚C, -23˚C, -25˚C, -13˚C, 12˚C, 20˚C
6. The temperature falls from 11˚C to -2˚C. How many degrees does the temperature fall?
7. The temperature is 6˚C. It falls by 8 degrees. What is the temperature now?
8. The temperature is -3˚C. How much must it rise to reach 5˚C?
9. The temperature is -20˚C. How much must it rise to reach -5˚C?

Challenge

1.

Problem Card 1



The distance from A to B is the same is the distance from B to C.

Find the value of C.

2.

Problem Card 2

Here are two number sequences.

8, 5, 2, -1, n, m, -10, ...

-9, n, p, 6, ...

Find the values of n, m and p.

3.

Problem Card 3

Jenny is thinking of a number.
Her number is:

Less than -9
Greater than -12
An odd number

What is her number?

Answers

Fluency

1. -2
2. -8
3. -7
4. 5
5. -11
6. -14
7. -2
8. -5 or 3
9. Put these in order from the smallest
   -8˚C, -6˚C, -4˚C -1˚C, 2˚C

Solve it!

1. 8˚C
2. -16˚C
3. -5˚C
4. -15˚C, -11˚C, 6˚C, 10˚C, 14˚C
5. -25˚C-23˚C, -13˚C 12˚C 16˚C, 18˚C, 20˚C
6. 13
7. -2˚C.
8. 8 ˚C
9. 15C

Challenge

1. 2
2. N= -4 m= -7 p= 1
3. -11

Learning pack page 4

Comparing and ordering numbers up to a million

Fluency

1 Tick to show whether the statements are true or false.

		T	F
A.	345,695 < 354,659		
B.	576,805 > 567,508		
C.	297,880 < 279,808		

2 Tick to show whether the statements are true or false.

		T	F
A.	21,376 < 201,736 < 210,376		
B.	370,445 > 307,445 < 307,544		
C.	146,584 < 164,548 > 164,854		

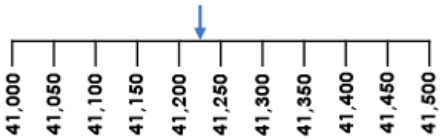
3 Order the numbers in descending order.

A.

HTh	TTh	Th	H	T	O
●● ●●	●	●●	●●		●

B. 412,305

C.



4 Order the numbers in ascending order.

A.

B. 410,502

C. Four hundred and one thousand five hundred and twenty

Solve it!

5 Work out which child has the number card according to their statements.

139,805

My number has 8 hundreds and rounds to 130,000.

Lucy

My number has 5 ones and is less than 140,000.

Arthur

6 Use the digit cards to make the statement correct.

4 5 6

45 __,1__3 > 455,143

Is there more than one possible solution?

Challenge

7 True or false?

Three hundred and twenty-six thousand, two hundred and fifty-three < 362,253

Give reasons for your answer.

8 True or false?

Six hundred and three thousand, two hundred and thirty-two > 631,452

Give reasons for your answer.

Answer

Fluency

1. A = Ture B = True C = False
2. A = Ture B = True C = False
3. B A C
4. A C B

Solve it!

5. Arthur
6. Three solutions: 456,143; 456,153; 455,163

Challenge!

7. True. 326,253 is less than 362,253 because the digits in the ten thousands column are different. 2 is less than 6.
8. False. 603,232 is less than 631,452 because the digits in the ten thousands column are different. 0 is less than 3.

Learning pack page 5

Addition

Fluency

A	B	C	D	E	F	G	H	I	J	K	L	M
2554	150	345	768	6384	3577	976	476	102	2514	279	768	582

N	O	P	Q	R	S	T	U	V	W	X	Y	Z
320	150	394	216	7649	9355	3866	2650	765	3941	683	6653	853

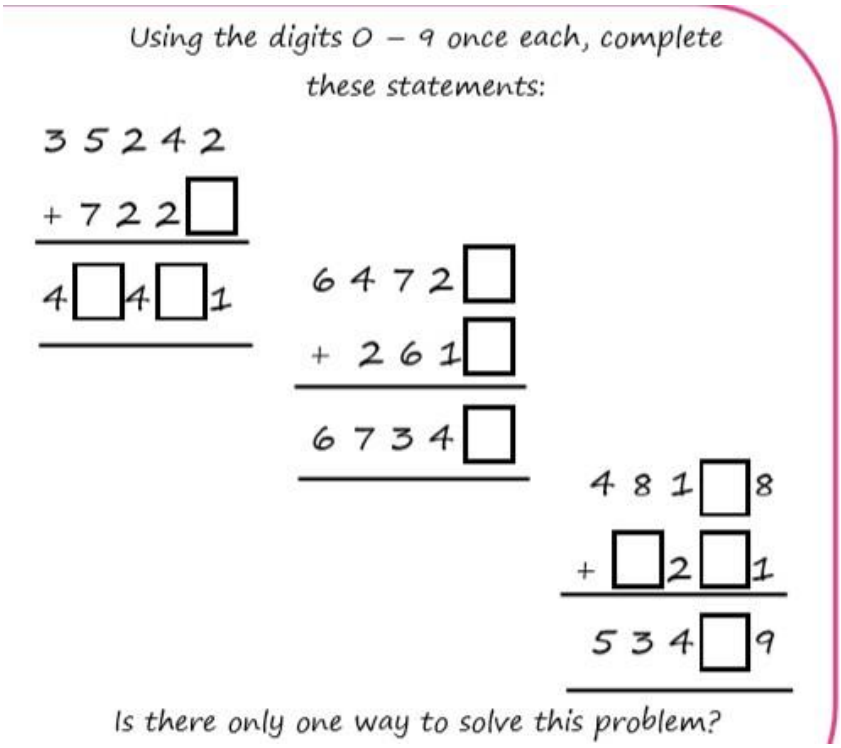
Find the value of the following words using the column method.

1. STAY
2. HOME
3. SAVE
4. NHS
5. LOCK
6. DOWN
7. SMILE
8. HAPPY

What other words can you find the sum of?

Challenge!

9.

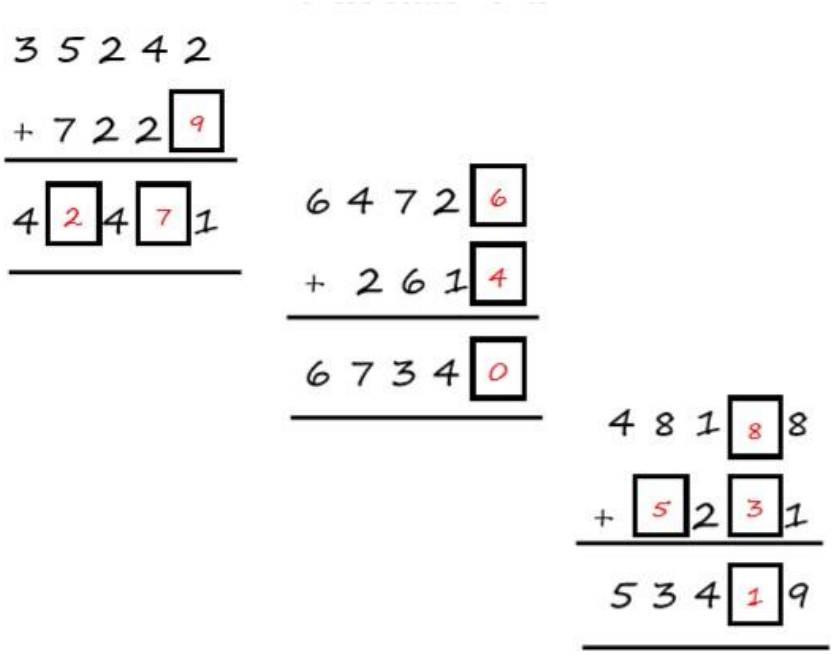


Answers

Fluency

1. STAY = 9355 + 3866 + 2554 + 6653 = 22,428
2. HOME = 476 + 150 + 582 + 6384 = 7,592
3. SAVE = 9355 + 2554 + 765 + 6384 = 19,058
4. NHS = 320 + 476 + 9355 = 10,151
5. LOCK = 768 + 150 + 345 + 279 = 1,542
6. DOWN = 768 + 150 +3941 + 320 = 5,179
7. SMILE = 9355 + 582 + 102 + 768 + 6384 = 17,191
8. HAPPY = 476 +2554 + 394 + 394 +6653 = 10,041

Challenge



Learning pack page 6

Subtraction

Fluency

1. 8514 – 3924
2. 6715 – 4628
3. 7239 – 3485
4. 5036 - 2746
5. Use the < > or = to complete the number sentences.
   a. 2483 – 1723 ☐ 957
   b. 4831 ☐ 8405 – 3921
   c. 9271 ☐ 12715 – 3851
   d. 7237 – 5391 ☐ 1865

Solve it

6 Use the digit cards to complete the subtraction.

	☐	7	☐	1	☐
–	5	☐	8	☐	3
	1	0	3	9	6

2	6	9	6	2

7 Use the digit cards to complete the subtraction.

	4	☐	3	5	☐
–	☐	9	2	☐	1
	2	9	☐	7	5

8	6	0	8	1

Challenge

8 Kai has used column method to answer the subtraction below.

	~~3~~ 2	~~2~~ 1	1 0	4	3
–	1	0	8	4	2
	1	1	2	1	1

Is he correct? Explain why.

9 Tim has used column method to answer a subtraction and has written it out below.

8 ten thousands, 200 tens and 9 ones subtract 37 thousands, 98 tens and 3 ones equals 42 thousands, 220 tens and 7 ones.

Is he correct? Explain why.

Answers

Fluency

6. 4590
7. 2087
8. 3754
9. 2290

5 e. 2483 – 1723 < 957
f. 4831 > 8405 – 3921
g. 9271 > 12715 – 3851
h. 7237 – 5391 < 1865

Solve it

6. 67,219 – 56,823 = 10,39
7. 48,356 – 19,281 = 29,075

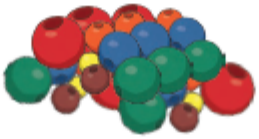
Challenge

8. Kai is incorrect. He has subtracted the tens and ten thousands columns incorrectly. The correct answer should be 21,201.
9. Tim is incorrect. He has subtracted the ones, hundreds and thousands columns incorrectly. The correct answer should be 44,026.

Learning pack page 7

Place value mystery number puzzle

Use these clues to find the missing number.

The **mystery number** has been ordered with these numbers. 2923 | ? | 3129 | 3160 **smallest** **greatest**	The **mystery number**, rounded to the nearest **one hundred** is **3100**.
As a Roman numeral, the **mystery number** has three Xs.	The **mystery number**, rounded to the nearest **ten** is **3090**.
On an abacus, the **mystery number** will use 17 beads.  	

The mystery number is _____.

Think of your own mystery number. Can you write clues about your mystery number?

How many different mystery numbers with clues can you make? Think about the range of different clues that you could use. E.g. multiple of…, divisible by …, rounds to…, odd or even

Answer: 3086

Learning pack page 8

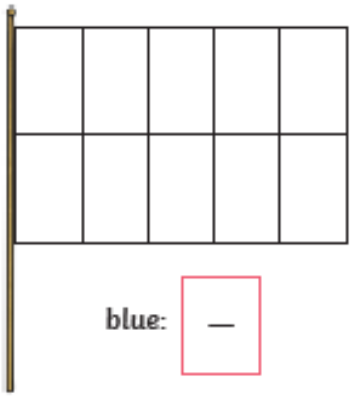
Adding and subtracting fractions

Shade each flag using the given fractions.

$\frac{1}{10} + \frac{1}{5}$ – green

$\frac{9}{10} - \frac{1}{2}$ – yellow

The rest will be blue.

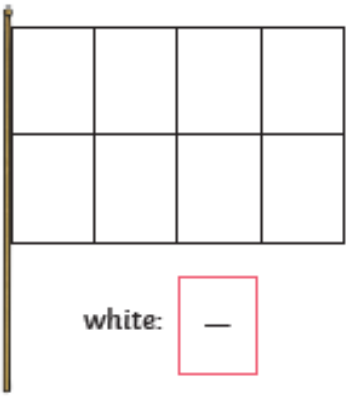


blue: ___

$\frac{1}{2}$ – red

$\frac{3}{4} - \frac{3}{8}$ – yellow

The rest will be white.

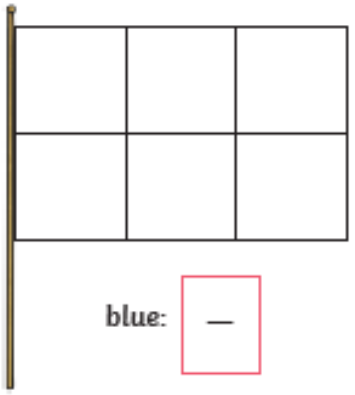


white: ___

$\frac{1}{6} + \frac{1}{3}$ – red

$\frac{5}{6} - \frac{2}{3}$ – yellow

The rest will be blue.

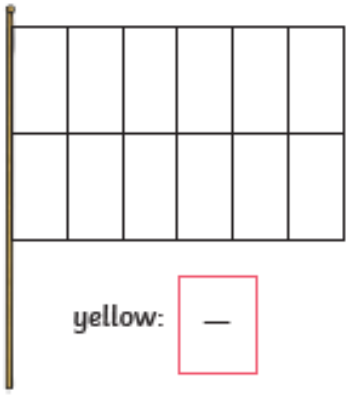


blue: ___

$\frac{11}{12} - \frac{2}{3}$ – green

$\frac{1}{6} + \frac{1}{3}$ – red

The rest will be yellow.

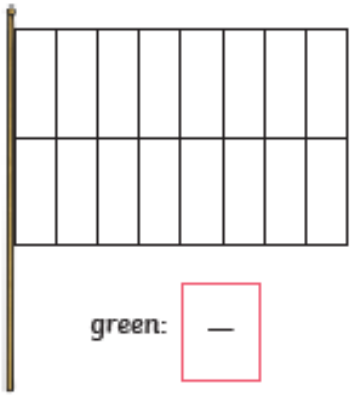


yellow: ___

$\frac{1}{8} + \frac{1}{4}$ – blue

$\frac{7}{8} - \frac{1}{2}$ – yellow

The rest will be green.

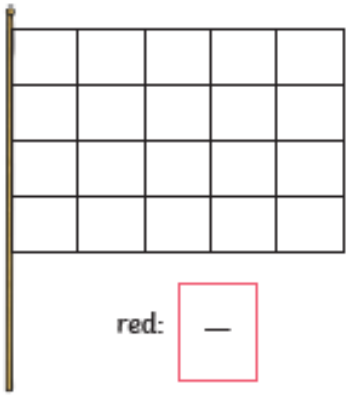


green: ___

$\frac{1}{10} + \frac{2}{5}$ – green

$\frac{1}{2} - \frac{1}{5}$ – yellow

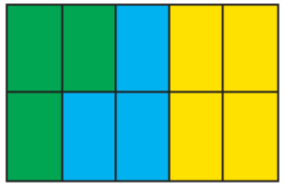
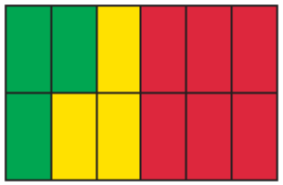
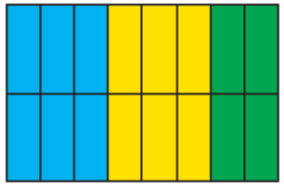
The rest will be red.



red: ___

Can you give a fraction for each of the 'remaining' colours?

Answers

$\frac{1}{10} + \frac{1}{5}$ = 3 green $\frac{9}{10} - \frac{1}{2}$ = 4 yellow  The rest will be blue. blue: $\frac{3}{10}$	$\frac{1}{2}$ = 4 red $\frac{3}{4} - \frac{3}{8}$ = 3 yellow  The rest will be white. white: $\frac{1}{8}$
$\frac{1}{6} + \frac{1}{3}$ = 3 red $\frac{5}{6} - \frac{2}{3}$ = 1 yellow  The rest will be blue. blue: $\frac{2}{6}$ or $\frac{1}{3}$	$\frac{11}{12} - \frac{2}{3}$ = 3 green $\frac{1}{6} + \frac{1}{3}$ = 6 red  The rest will be yellow. yellow: $\frac{3}{12}$ or $\frac{1}{4}$
$\frac{1}{8} + \frac{1}{4}$ = 6 blue $\frac{7}{8} - \frac{1}{2}$ = 6 yellow  The rest will be green. green: $\frac{4}{16}$ or $\frac{1}{4}$	$\frac{1}{10} + \frac{2}{5}$ = 10 green $\frac{1}{2} - \frac{1}{5}$ = 6 yellow  The rest will be red. red: $\frac{4}{20}$ or $\frac{2}{10}$ or $\frac{1}{5}$

Learning pack page 9

Ordering decimals

Fluency

Write the numbers in ascending order.

1) 0.325 0.235 0.352 0.253
2) 0.684 0.846 0.746 0.648
3) 1.49 1.489 1.495 1.458
4) 0.8 0.68 0.846 0.6 0.84
5) 2.56 2.6 2.546 2.65 2.645

Solve it!

Choose the correct number to fill the gap.

e.g. 6.35 or **6.53**

6.3, 6.341, 6.4,_____, 6.698

1) 5.124 or 5.241 -> 5.1, 5.195,_____, 5.234, 5.245
2) 7.1 or 7.18 -> 6.895, 6.975, 7.047, 7.107,_____, 7.186
3) 8.652 or 8.658 -> 8.648, 8.649, 8.654,_____, 8.659

Use the digits to make 5 numbers with 3 decimal places and then put them in order from largest to smallest. Can you find a system (way of using the numbers) that makes this task easier?

4) 8 0 4 2
5) 9 3 6 1
6) 1 0 7 5

Challenge

1) Ben has used the digits 6,5 and 4 to make his own decimal numbers. He has then put them in order from smallest to largest. Is he correct? Explain your answer.
   0.654, 0.645, 0.564, 0.456
2) Toby has used the digits 7, 1, 0 and 4 to make his own decimal numbers up to 3 decimal places. He has then put them in order from smallest to largest. Has he found all of the different combinations? Are they in the

correct order? Explain your answer.

0.4 0.17 0.417 0.714 0.741

Answers

Fluency:

1) 0.235, 0.253, 0.325, 0.352
2) 0.648, 0.684, 0.746, 0.846
3) 1. 458, 0.489, 0.49, 0.495
4) 0.6, 0.68, 0.8, 0.84, 0.846
5) 2.546, 2.2.56, 2.6, 2.645, 2.65

Solve it!

1) 5.241
2) 7.18
3) 8.658
4) E.g 8.402, 8.042, 8.024
5) E.g. 9.631, 9.613, 9.361
6) E.g. 7.501, 7.051, 7.015

Challenge

1) He has written them largest to smallest.
2) He hasn't done any numbers that have an integer (whole number) of 1,4 or 7.

Learning pack page 10

Emoji maths code breaking.

Use the emoji code at the top to work out the numbers and solve the calculations.

You could draw your answer as emojis!

All of the calculations are either addition or subtraction. Can you draw your own emoji

multiplication and division calculations?

Answers:

1. 

2. 

3. 

4. 

5. 

6. 

7. 

8. 

9. 

10.