Maths Revision

Order Numbers up to 10 000 000 and Determine the Value of Each Digit

Look at these numbers.

Write them in order from smallest to greatest.

8 987 390 9 678 543 9 543 045 4 987 390 8 975 434 9 543 067

When you have written them in order, explain to your partner the method you used to order them. Which ones did you find most tricky? Why?

1. Which of the numbers has a 6 in the tens column?

2. Which of the numbers has a 7 in the ten thousands column?

3. What would be 10 less than the number that has a 4 in the millions column?

Compare Numbers up to 10 000 000 and Determine the Value of Each Digit

Look at these numbers.

Identify whether a < or > sign needs to go in each box.

4 567 432		4 576 432
7 567 309		7 567 329
9 506 705		9 500 705
3 400 101		3 401 001
1 090 030		1 090 103

Compare your answers with your partner. Do you have the same?

Which ones did you find most tricky?

Challenge:
Choose one of the number sentences and explain to your partner which digit column helped you to identify the greater/smaller number.

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Round Any Whole Number to a Required Degree of Accuracy

2876 + 1325

Estimate the answer to this question by:

a. Rounding to the nearest 1000 _____

b. Rounding to the nearest 100 _____

c. Rounding to the nearest 50 _____

d. Rounding to the nearest 10 _____

Which estimate do you think will be closest to the correct answer? Why?

_____

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Use Negative Numbers and Calculate Intervals across Zero

A diver records some of his finds in this table:

Object	Depth
Shipwreck	-13m
Stingray	-5m
Another Diver	2m above the shipwreck
Barracuda	2m lower than the stingray

Work with a partner to discuss the following:

a. Which object is the deepest? How do you know?

b. Which is higher, the other diver or the barracuda? How do you know?

c. A man is standing on the top deck of a boat that is on the water. The man is 2 metres above the surface of the sea. How far apart is he from the stingray?

Challenge:
What other question could be asked about the details in the table?

Solve Problems Involving Addition, Subtraction, Multiplication and Division

Target Number: **1823**

Can you make the number above using any of the following?

100	4	5	7	32	10	25	30

Each number may only be used once.

Try different ways of doing this until you are as close to the number as you can be.

Is there more than one way of reaching the target number?

Identify Common Factors

Find all the factors of these numbers

6 _____

9 _____

12 _____

15 _____

18 _____

30 _____

Challenge:
Choose two of the numbers above and write the common factors of them both

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Identify Common Multiples

Find the first 10 multiples of these numbers:

3 _____

4 _____

6 _____

7 _____

9 _____

Challenge:
Choose two of the numbers above and write the common multiples of them both.
Can you then identify the **lowest** common multiple (LCM) of the two numbers. When complete, pick two more numbers to find the LCM of.

Identify Prime Numbers

Look at the 100 square and write down the prime numbers that you see on it.

With your partner, come up with a simple definition of a prime number to share with the class.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Can you find all of the square numbers on the grid?

Can you identify the cube numbers on the grid?

Solve Addition and Subtraction Multi-Step Problems in Context

A toyshop sells different sizes of cuddly toys – small, medium and large.

Freya buys a medium and a large cuddly toy and spends £9.25.

Oscar buys a small and a large cuddly toy and spends £8.74.

Asher buys 2 medium cuddly toys and spends £7.00.

How much does:

a. A small cuddly toy cost? _____

b. A medium cuddly toy cost?_____

c. A large cuddly toy cost?

When you have worked out the answers, share with a partner and compare.Explain your reasoning to your partner.

Challenge:
Make up a similar word problem for your friend to solve and swap so that you have to solve theirs and they solve yours.

Carry out Calculations Involving the Four Operations

A sweetshop sells the following items:
Boxes of chocolates: £3.49
Bags of 100g sweets: £1.10
Lollipops: 25p each

Amir wants to buy 3 boxes of chocolates, 3 bags of 100g sweets and 7 lollipops. She has £16 in cash. How much change will she receive?

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She decides to give $\frac{3}{4}$ of her change to the charity box – how much change does she give to charity?

Solve Problems Involving Addition and Subtraction

Fill in the blanks to complete these number sentences:

3456	+		=	7654
1308	+		=	5406
2598	-	1409	=	
8549	-		=	3096
	+	6421	=	7104
8543	-		=	1407

With a partner, discuss:

How did you solve each question? Which did you find most difficult?

Solve Problems Involving Multiplication and Division

Fill in the blanks to complete these number sentences:

45	×		=	405
308	×		=	1520
355	×		=	1775
900	÷	3	=	
1500	÷		=	250
960	÷		=	120

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With a partner, discuss:

How did you solve each question? Which did you find most difficult?

Describe Linear Number Sequences

Work out the steps of these linear number sequences.

When you have, work out the missing two numbers:

2	6	10	14	18		
2	9		23	30	37	
82	77		67	62	57	
5	20	35			80	95

Describe to your partner what a linear sequence is.

Challenge:
Create your own linear sequence for your partner to complete by writing it out with two blank boxes. How complex can you make your sequence?

Express Missing Number Problems Algebraically

Work out 'n' in each of these algebraic expressions:

	n
n + 15 = 41	
43 – n = 11	
n + 32 = 66	
98 – n = 43	
406 – n = 118	

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Write an algebraic expression to show each of these calculations.

a. A number added to 15 equals 75.

b. 65 less than a number is 14.

c. 38 less than a number is 54.

When you have written these expressions, try and solve them to find out what 'n' is.

Find Pairs of Numbers That Satisfy an Equation with Two Unknowns

Find all the possible pairs of numbers that make these calculations correct:

a + b = 18 _____

cd = 36 _____

l - m = 4 _____

(Find 5 pairs of numbers for this one - there are lots to choose from!)

When you have written your pairs of numbers, share them with a partner.

Have either of you missed any possibilities?

Explain to each other how you found the pairs of numbers

Use Common Factors to Simplify Fractions

Write factors for these numbers. Can you see any common factors?

6	**9**	**12**
_____	_____	_____
16	**20**	**36**
_____	_____	_____

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Use your factor knowledge to simplify the following fractions:

$\frac{12}{15}$ _____

$\frac{6}{24}$ _____

$\frac{12}{36}$ _____

$\frac{24}{36}$ _____

Challenge:
Write 3 of your own fractions that can be simplified using common factors. Swap with a partner for them to solve.

Compare and Order Fractions

Which fraction is greater in each pair?

$\frac{3}{9}$ or $\frac{4}{8}$ _____

$\frac{7}{3}$ or $\frac{9}{2}$ _____

$\frac{3}{4}$ or $\frac{18}{20}$ _____

$\frac{5}{7}$ or $\frac{9}{14}$ _____

$\frac{2}{3}$ or $\frac{29}{36}$ _____

Explain to a partner how you worked out each fraction.

Did you both reach your answer in the same way?

Add and Subtract Fractions with Different Denominators

For each pair of fractions, find the 'lowest common denominator' and complete the calculation:

$\frac{1}{2} + \frac{1}{3} =$ _____

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$\frac{4}{5} + \frac{2}{9} =$ _____

$\frac{2}{3} + \frac{4}{5} =$ _____

$\frac{3}{6} + \frac{7}{9} =$ _____

Compare your calculations with a partner.

Do you have the same answer? Can you explain how you worked it out?

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Add and Subtract Fractions with Different Denominators

For each pair of fractions, find the 'lowest common denominator' and complete the calculation:

$\frac{3}{4} - \frac{8}{20} =$ _____

$\frac{2}{5} - \frac{1}{4} =$ _____

$\frac{3}{4} - \frac{4}{7} =$ _____

$\frac{8}{12} - \frac{5}{9} =$ _____

Compare your calculations with a partner.

Do you have the same answer? Can you explain how you worked it out?

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Multiply Simple Pairs of Proper Fractions, Writing the Answer in Its Simplest Form

For each pair of fractions, find the 'lowest common denominator' and complete the calculation:

$\frac{3}{4} \times \frac{3}{4} =$ _____

$\frac{2}{5} \times \frac{1}{6} =$ _____

$\frac{7}{8} \times \frac{4}{7} =$ _____

$\frac{8}{12} \times \frac{2}{9} =$ _____

Divide Proper Fractions by Whole Numbers

When you divide a fraction by a whole number, you have to multiply the fraction's denominator by the whole number. Don't forget to write your answer in its simplest form.

$\frac{5}{6} \div 2 =$ _____

$\frac{5}{12} \div 6 =$ _____

$\frac{7}{9} \div 5 =$ _____

$\frac{1}{4} \div 7 =$ _____

Compare your answers with a partner. Can you explain to each other how you carried out each calculation?

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Identify the Value of Each Digit in Numbers Given to Three Decimal Places

1 657 043.86

Name the digit that is in the:

hundred column, _____

tenths column, _____

ten thousands column, _____

millions column, _____

tens column, _____

hundredths column, _____

thousands column, _____

ones column. _____

Give a partner 10 digits to work with.

What is the greatest number that they can make? What is the smallest?

_____

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Multiply and Divide Numbers by 10, 100 and 1000 Giving Answers to 3 Decimal Places

Can you complete the table below?

÷ 1000	÷ 100	÷ 10		× 10	× 100	× 1000
			34			
			506			
			7049			
			12 305			

Challenge:

Can you describe what is happening to the number in each calculation?

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Use Equivalences between Simple Fractions, Decimals and Percentages

Look at the fractions, decimals and percentages and match them in groups of 3 that are equivalent to make a happy family!

50%	0.25	$\frac{1}{2}$
100%	1.0	$\frac{1}{10}$
40%	0.75	$\frac{1}{4}$
25%	0.5	$\frac{4}{10}$

.....

Convert between Miles and Kilometres

Using the approximation that **5 miles = 8 kilometres,** convert each of these into either miles or kilometres:

Miles	Kilometres
15	
	40
20	
	48
7.5	

Miles	Kilometres
50	
	2
100	
	20
	60

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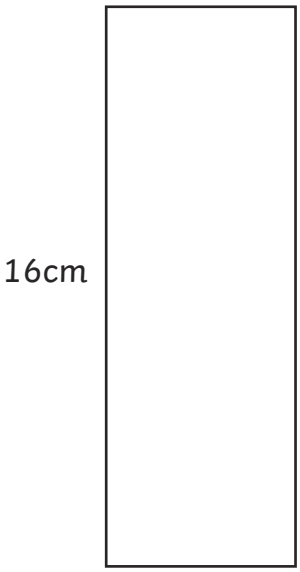
Share your answers with a partner. Do you have the same answers? Discuss how you completed the calculations.

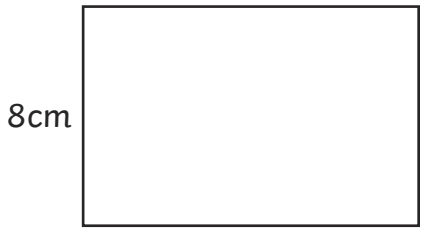
Recognise That Shapes with the Same Area... Can Have Different Perimeters

Work out the area and perimeter of these shapes...

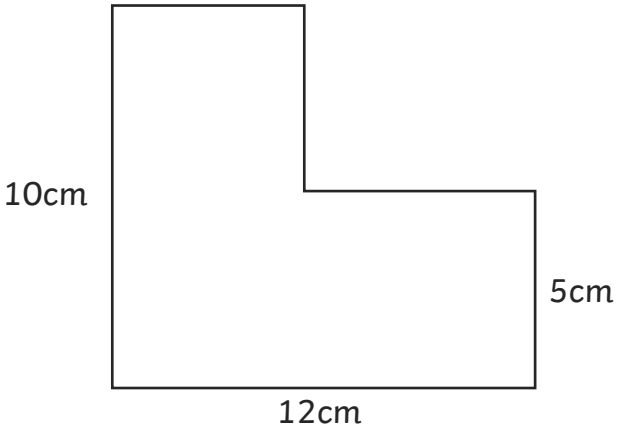
A.



B.



C.



A. Area: _____ Perimeter: _____

B. Area: _____ Perimeter: _____

C. Area: _____ Perimeter: _____

What do you notice about the area and perimeter of each shape?

Can you complete the half-written objective at the top of the slide?

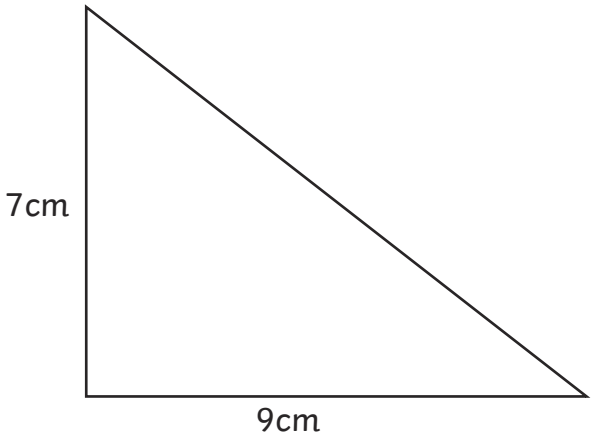
Challenge:

How many other ways could the area of shape C be calculated?

Calculate the Area of Triangles

Calculate the area of each triangle.

A.



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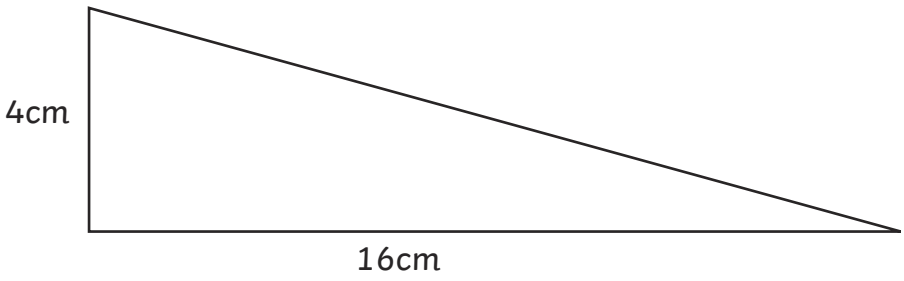
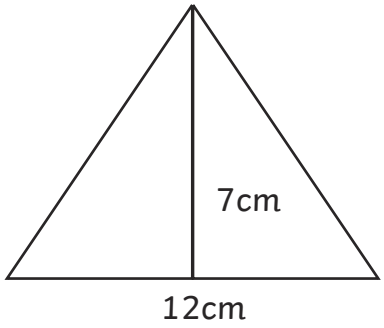
B.



C.



A. _____

B. _____

C. _____

Challenge:

A triangle has a base of 13cm and an area of 71.5cm^2. What is its height?

_____

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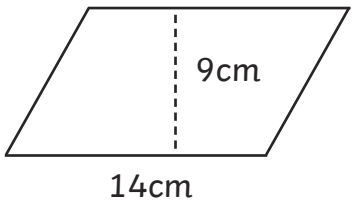
Calculate the Area of Parallelograms

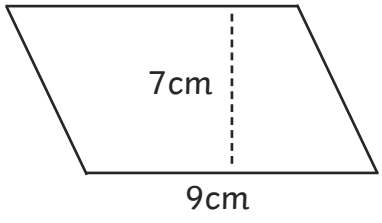
Calculate the area of each parallelogram.

A.

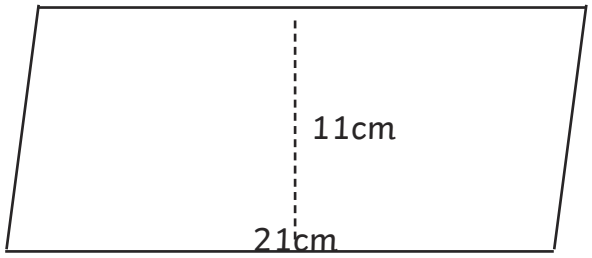


B.

C.



D.



A. _____

B. _____

C. _____

D. _____

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Challenge:
A parallelogram has a height of 25cm and an area of 450cm^2.
What is the length of its base?

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Calculate the Mean as an Average

A hospital keeps records of babies' birth weights over a weekend.

Baby A	Baby B	Baby C	Baby D	Baby E
1.8kg	2.2kg	3.5kg	2.4kg	2.1kg

What is the mean weight of the babies born over the weekend?

How did you calculate the average?

Were there any of the weights that have made a big difference to the average? How do you know?

Challenge:
If two more babies were born that week, how does their data affect the average? Give your answer to 2 decimal places.

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Solve Problems Involving the Calculation of Percentages

Solve the following problems:

In a year group of 50 children there are 21 girls. **What percentage of the pupils are boys?**

In a bag of 25 marbles there are two colours (red and yellow). 6 marbles are red, the rest are yellow. **What percentage of the marbles are yellow?**

In a school, 40% of the children are girls. There are 80 girls. **How many children are in the school in total?**

Challenge:
If you were explaining how you solved each problem to a friend, what would you say was the most efficient calculation?