Write the missing number for each addition and subtraction.

1. 50 000 + 2000 + 100 + 40 + 9 = ☐
2. 60 000 + 7000 + 300 + 30 + 4 = ☐
3. 80 000 + ☐ + 70 + 2 = 85 072
4. 3982 – ☐ = 3082
5. 90 000 + 700 + 50 + 1 = ☐
6. 80 + 2 + 5000 + 20 000 + 100 = ☐
7. 42 345 – 300 = ☐
8. 700 + 40 + 90 000 + 9 = ☐
9. 36 213 – ☐ = 30 213
10. 24 575 – ☐ = 24 075

8000 500 30 000 1 20

Write answers for each pair.

11. 3450 + 200 = ☐
    3450 – 200 = ☐
12. 23 932 + 30 = ☐
    23 932 – 30 = ☐
13. 46 932 + 2001 = ☐
    46 932 – 2001 = ☐
14. 60 503 + 402 = ☐
    60 503 – 402 = ☐

I am confident with place value in 5-digit numbers.

Write the missing number for each addition and subtraction.

1. 23 216 + 2100 = ☐
2. 53 482 – 280 = ☐
3. 45 834 + 3004 = ☐
4. 23 346 + ☐ = 29 347
5. 53 671 – 3500 = ☐
6. 92 078 + ☐ = 93 088
7. 44 277 + 4020 = ☐
8. 67 807 + ☐ = 67 909
9. 83 162 – 10 060 = ☐
10. 56 778 – ☐ = 46 779
11. 21 897 – ☐ = 20 807
12. 84 713 + ☐ = 84 784
13. 92 275 – ☐ = 82 175
14. 66 256 + 2110 = ☐
15. 35 504 + ☐ = 36 644
16. 53 022 + 724 = ☐
17. 45 427 – ☐ = 40 117
18. 32 208 + 11 101 = ☐
19. 57 642 + ☐ = 59 752
20. 5213 + 20 103 = ☐

THINK

A number plus 11 001 has the answer 47 829.
What is the same number minus 11 001?

I am confident with solving place-value additions and subtractions for 5-digit numbers.

Write > or < between each pair of numbers.

1	4785	< 5865	6	5249	> 5832
2	3672	< 7631	7	1536	< 1387
3	7835	< 8201	8	9089	< 9102
4	8114	> 4799	9	3113	> 3047
5	4285	< 4386	10	7354	> 7381

Write > or < between each pair of 5-digit numbers.

11	47384	> 32562
12	58588	< 84294
13	62789	< 65893
14	76113	> 73285
15	81539	> 87444
16	35675	< 36042
17	75943	> 75246
18	58742	> 58698

THINK Write three numbers that lie between 49243 and 49803.

I am confident with comparing 5-digit numbers.

Adding 4-digit numbers

Use the method above to find the totals. Estimate first.

1	4728 + 158	6	3622 + 3658
2	5836 + 523	7	4045 + 6158
3	9469 + 121	8	6307 + 5756
4	7667 + 514	9	4543 + 7258
5	4728 + 5258	10	9753 + 2689

I am confident with adding 4-digit numbers using the column method.

Look at the additions below.

1. Which of these do you think will give the largest answer?
2. Which will give the smallest answer?
3. Which will give the answer closest to 10 000?

Find the totals, estimating first.

4. 3864 + 4058 = ____

5. 6846 + 4822 = ____

6. 7488 + 4174 = ____

7. 8961 + 8054 = ____

8. 6668 + 5158 = ____

3864 to the nearest thousand is 4000.

4000 + 4000 = 8000

9. 5722 + 7638 = ____

10. 7045 + 6358 = ____

11. 1369 + 5756 = ____

12. 1426 + 8658 = ____

13. 3755 + 2689 = ____

THINK Work out the missing digits:

$$\begin{array}{r} 2\,5\,7\,6 \\ +\ \square\square\square\square \\ \hline 6\,3\,1\,7 \end{array}$$

I am confident with adding 4-digit numbers using the column method.

Some animals entered a contest. Add the votes to find out their scores.

1. Skateboarding cat

3564 + 3252 + 4053 = ____

2. Whispering horse

2745 + 5352 + 4353 = ____

3. Ice-skating mouse

3816 + 1846 + 4750 = ____

4. Talking dog

4722 + 1846 + 6631 = ____

5. Skipping frog

1647 + 3846 + 3738 = ____

6. Dancing mole

5868 + 986 + 6415 = ____

7. Jumping cow

4527 + 4635 + 4258 = ____

8. Hang-gliding hamster

2738 + 8452 + 2364 = ____

9. Swimming bird

8352 + 635 + 1258 = ____

10. Which animal won the contest?

THINK How many votes did the skateboarding cat and the talking dog get altogether?

I am confident with adding 4-digit numbers using the column method.

Add and subtract 2- and 3-digit numbers

1. 37 + 59 = ☐
2. 28 + 57 = ☐
3. 94 – 68 = ☐
4. 44 + 89 = ☐
5. 57 + 63 = ☐
6. 68 + 72 = ☐
7. 77 – 36 = ☐
8. 163 – 58 = ☐
9. 267 + 31 = ☐
10. 472 – 39 = ☐
11. 57 + 259 = ☐
12. 836 – 63 = ☐
13. 75 + 754 = ☐
14. 848 – 62 = ☐
15. 381 + 79 = ☐
16. 837 – 59 = ☐

Solve these problems.

17. James is 93 cm tall. James is 58 cm shorter than his brother. How tall is his brother?
18. A coat was reduced in a sale by £37. If it cost £81 before the sale, what was its sale price?
19. Amira has a bowl of cream. She puts 325 ml of it in a cake. Then she gives the 78 ml left in the bowl to her cat. How much cream did Mel have to start with?
20. The summit of a mountain is 853 m above sea level. Clive is 88 m beneath the summit. How many metres above sea level is Clive?

I am confident with addition and subtraction of 2- and 3-digit numbers.

Complete these additions and subtractions.

1. 77 + 59 = ☐
2. 94 – 67 = ☐
3. 62 – 28 = ☐
4. 86 + 79 = ☐
5. 87 – 63 = ☐
6. 168 – 72 = ☐
7. 377 + 36 = ☐
8. 123 – 78 = ☐
9. 477 + 36 = ☐
10. 422 – 39 = ☐
11. 57 + 289 = ☐
12. 816 – 67 = ☐
13. 67 + 738 = ☐
14. 848 – 69 = ☐
15. 981 + 59 = ☐
16. 817 – 66 = ☐

Solve these problems.

17. What number is 83 more than 47?
18. Lena is 67 years younger than her grandma. How old would her grandma be when Lena is 28?

19. Hassan does a survey of birds. He sees 117 birds in the morning and 68 in the afternoon. How many more did he see in the morning than in the afternoon?

20. Jo puts 364 g of flour, 48 g of sugar and 75 g of butter into a bowl and mixes it. What is the mass of the mixture?
21. Jake is 26 years younger than his dad. Jake's grandad is 23 years older than Jake's dad. Jake is 9 years old, how old is his grandad?

THINK

How many different ways can you write an addition of two 2-digit numbers to get the answer 147? Write at least four.

I am confident with addition and subtraction of 2- and 3-digit numbers.

Use place value to add or subtract.

300 7 60 5000

1. 5367 – 307 = ☐
2. 4224 + 501 = ☐
3. 3639 – 2200 = ☐
4. 4357 + 621 = ☐

Count on to complete these additions.

5. 835 + 43 = ☐
6. 356 + 37 = ☐
7. 684 + 35 = ☐
8. 556 + 76 = ☐

Use Frog to complete these subtractions.

9. 134 – 88 = ☐
10. 143 – 96 = ☐
11. 153 – 78 = ☐
12. 321 – 284 = ☐

Count back to complete these subtractions.

13. 174 – 25 = ☐
14. 243 – 28 = ☐
15. 363 – 35 = ☐
16. 573 – 61 = ☐

Partition to add or subtract.

17. 47 + 85 = ☐
18. 56 + 67 = ☐
19. 89 – 45 = ☐
20. 79 – 36 = ☐

Use known number facts to add or subtract.

21. 175 – 6 = ☐
22. 286 + 8 = ☐
23. 382 – 8 = ☐
24. 435 + 7 = ☐

I am confident with mental addition and subtraction of 2- and 3-digit numbers using different methods.

Choose a good method for completing each addition or subtraction.

1. 4357 + 1202 = ☐
2. 123 – 78 = ☐
3. 382 – 7 = ☐
4. 573 – 61 = ☐
5. 4824 – 504 = ☐
6. 79 – 35 = ☐
7. 356 + 27 = ☐
8. 116 – 88 = ☐
9. 834 – 55 = ☐
10. 72 – 47 = ☐
11. 553 – 38 = ☐
12. 67 + 75 = ☐
13. 784 + 33 = ☐
14. 135 – 91 = ☐
15. 546 + 86 = ☐
16. 321 – 284 = ☐

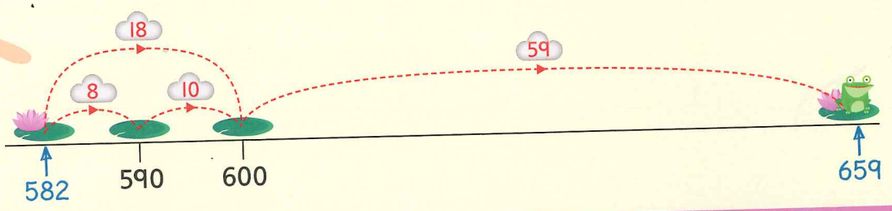
Solve these problems.

17. The tallest man ever to live, Robert Wadlow, was 272 cm tall. Tom is 94 cm shorter than this. How tall is Tom?
18. The Roman Emperor Antonius Pius began his reign in the year 138 AD. After 23 years he died. In what year did he die?
19. Sam had £78 in his money box. He took out £27 and bought a new jumper. He now wants to buy a new phone, which costs £95. How much more money does he now need to save?
20. In 1976 the Olympic Games were held in Canada. In 1924 they were held in France. How many years apart are these two dates?

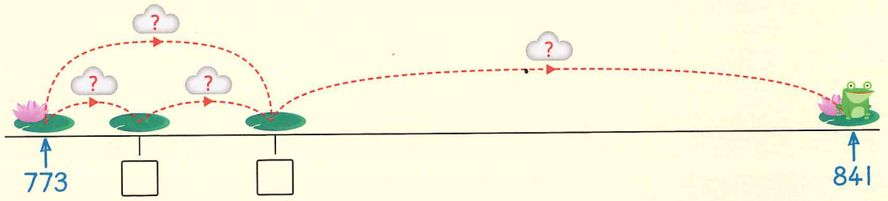
I am confident with mental addition and subtraction of 2- and 3-digit numbers using appropriate methods.

Mental subtraction of 3- and 4-digit numbers

659 – 582 = 77



1 841 – 773 = ☐



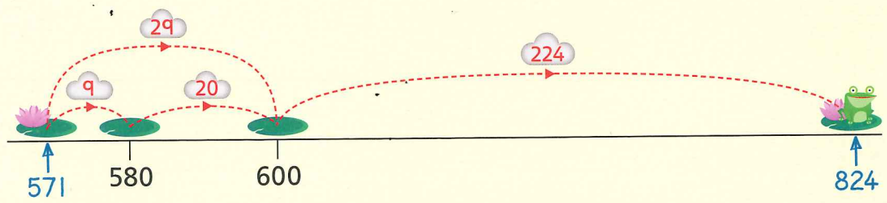
2 461 – 384 = ☐

3 738 – 675 = ☐

4 554 – 469 = ☐

5 966 – 872 = ☐

6 824 – 571 = ☐



7 672 – 387 = ☐

8 934 – 678 = ☐

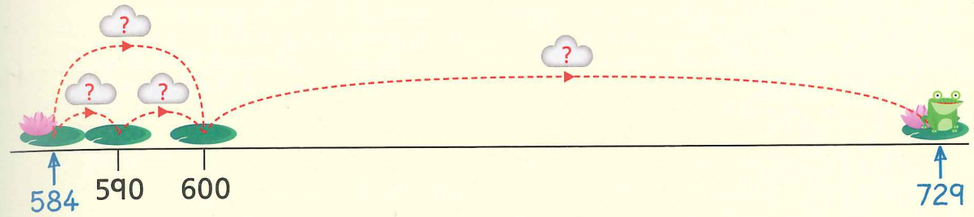
9 771 – 483 = ☐

10 833 – 379 = ☐

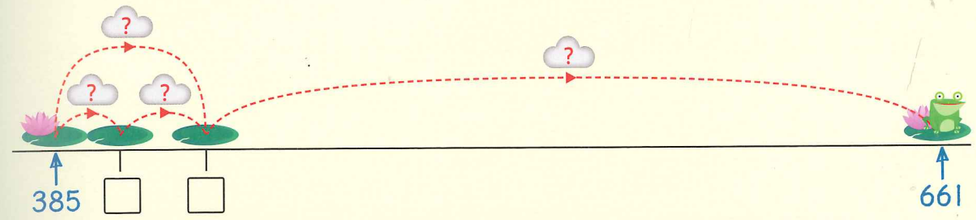
I am confident with subtraction of 3-digit numbers using the mental method of counting up.

Count up using Frog to complete these subtractions.

1 729 – 584 = ☐



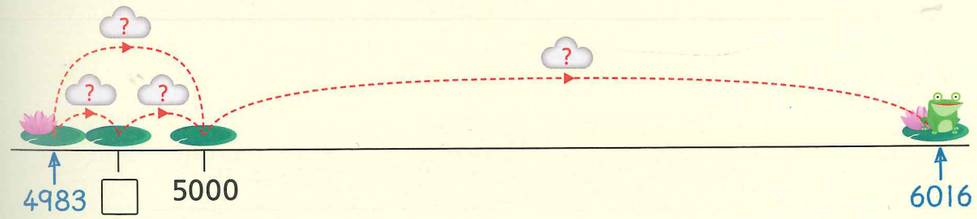
2 661 – 385 = ☐



3 462 – 278 = ☐

4 945 – 687 = ☐

5 6016 – 4983 = ☐



6 4007 – 3989 = ☐

7 5003 – 2996 = ☐

8 7001 – 4987 = ☐

9 8012 – 6982 = ☐

10 6015 – 3988 = ☐

11 9020 – 5979 = ☐

12 5031 – 3981 = ☐

13 8027 – 4986 = ☐

I am confident with subtraction of 3- and 4-digit numbers using the mental method of counting up.

Count up using Frog to complete these subtractions.

1. 704 − 689

2. 800 − 769

3. 1001 − 875

4. 2000 − 967

5. 2000 − 1978

6. 5000 − 3975

7. 8002 − 5889

8. 7000 − 3894

9. 9000 − 6945

10. 7002 − 5964

11. 5002 − 3897

12. 8010 − 3788

13. 9013 − 4867

14. 6006 − 2858

15. 9000 − 5446

THINK

A pair of 4-digit numbers have a difference of 1025. One number is above 7000 and the other is below 6000. Write different possible numbers that the pair could be.

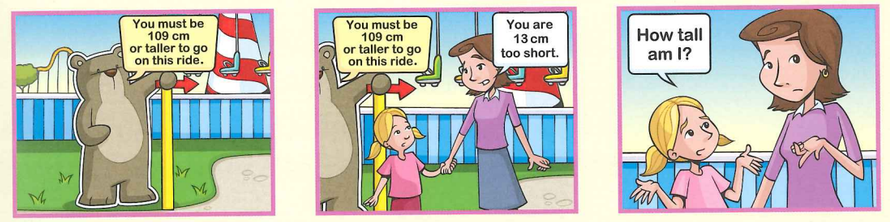
I am confident with subtraction of 3- and 4-digit numbers using the mental method of counting up.

Mental word problems

1.

2.

3.



4. Yesterday 4583 people visited the theme park. 2502 of them were children. How many were adults?

5. Pip spent £48 for the family to get into the park and £27 on food and snacks. How much did she pay in total?

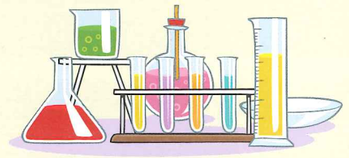
THINK

Make up a cartoon of your own to match the question $77 + 35 = \square$

I am confident with addition and subtraction word problems using mental methods.

Solve these word problems.

1. Anton is a scientist. He pours 74 ml of acid into a test tube. How much more does he need to add to make 100 ml?



2. In an experiment, Anton must shake a mixture for 25 seconds and then wait for a further 37 seconds. How many seconds will this take altogether?

3. Anton weighs a bowl full of sodium. The scales show 3258 g. If the bowl weighs 1021 g, how much does the sodium weigh?

4. He has two containers. One holds 2000 ml and the other holds 725 ml. How much more does the larger container hold?

5. A saucer held 138 ml of water. After several days of evaporation it held 86 ml. How much water had evaporated?

6. There are 500 scientists who work at a centre. This month, 378 of them got a pay rise. How many did not?

7. Into a bowl weighing 1021 g, Anton puts 203 g of powder and 610 g of salt. He puts the bowl onto the scales. What weight is shown?

8. At the centre there are 500 scientists, 214 support staff, 52 cleaners and 30 canteen workers. How many people work at the centre in total?

I am confident with addition and subtraction word problems using mental methods.

Solve these word problems.

1. Mr Smith and Mr Barr are on a plane. Mr Barr says that he has been on 73 flights in his life. Mr Smith says that it is his 47th flight. How many more flights has Mr Barr been on?

2. A plane is on a 2000 km flight. After 1 hour it has flown 482 km. How many more kilometres does it have to go?

3. Of the 304 passengers on a plane, 268 are adults and the rest are children. How many are children?

4. On a plane 57 chicken meals and 74 vegetarian meals were served. How many meals were served altogether?

5. A pilot flew 2621 km on Monday and 3053 km on Tuesday. How far did she fly altogether?

6. On a plane there are 154 men, 142 women and 9 children. How many people are on the plane?

7. A plane has 248 seats, of which 67 are empty and 8 are being used by the airline staff. The rest of the seats are taken by passengers. How many passengers are there?

8. There are 1000 passengers at a Greek airport about to fly to London, Manchester or Birmingham. 295 are going to London and 304 are going to Manchester. How many are going to Birmingham?

I am confident with addition and subtraction word problems using mental methods.

Two decimal places

GRAB! A place-value grid

Write what the given digit represents in each number.

The 5 in 37·05. The 5 represents five hundredths, or five 0·01s or 0·05.

100s	10s	1s	0·1s	0·01s
	3	7	0	5

1. The 2 in 47·21.
2. The 3 in 63·87.
3. The 1 in 79·1.
4. The 6 in 22·36.
5. The 0 in 37·05.
6. The 8 in 383·29.
7. The 6 in 137·61.
8. The 9 in 245·19.

Write a number where:

9. the tenths digit is two more than the tens digit.
10. the hundredths digit is one less than the tenths digit.
11. the tens digit is five more than the hundredths digit.
12. the hundreds digit is double the hundredths digit.
13. the tenths digit is three times the tens digit.

THINK

A number less than 50 has a hundredths digit. The tenths digit and the ones digits have a total that is the same as the tens digit. If the number has no zero digits, what could it be? Find four different answers.

I am confident with place value of decimals to two decimal places.

Write the outputs for each input.

3·14 → ×10 → 31·4

1. 2·5 → ×10 → ☐
2. 0·27 → ×10 → ☐

3. 0·47 → ×100 → ☐
4. 12·5 → ×100 → ☐
5. 0·03 → ×100 → ☐

6. 28 → ÷10 → ☐
7. 7·1 → ÷10 → ☐
8. 12·4 → ÷10 → ☐

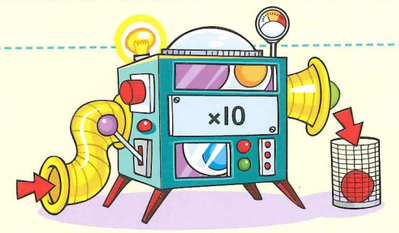
9. 8 → ÷100 → ☐
10. 12 → ÷100 → ☐
11. 140 → ÷100 → ☐

12. 9 → ÷10 then ÷10 again → ☐
13. 101 → ÷10 then ÷10 again → ☐
14. 3206 → ÷10 then ÷10 again → ☐

I am confident with place-value multiplications and divisions involving decimals.

Write the missing outputs or inputs.

13·57 → → 135·7



1 □ → → 32

2 □ → → 10·4

3 20·46 → → □

4 □ → → 44

5 □ → → 160

6 72 → → □

7 □ → → 0·66

8 □ → → 1·9

9 0·3 → → □

10 12·6 → → □

11 □ → → 140

12 0·07 → → □

13 34·1 → → □

14 □ → → 903·6

I am confident with place-value multiplications and divisions involving decimals.

0·1	0·2	0·3	0·4	0·5	0·6
1·1	1·2	1·3	1·4	1·5	
2·1	2·2	2·3	2·4		
3·1	3·2	3·3			
4·1	4·2				

GRAB! 0·01 to 1-square

3·4	
4·3	4·4

Copy and complete on squared paper.

1

1·2	
	2·3

4

	4·2

7

0·4	
	1·5

2

	0·5	

5

2·3	

8

	3·7	

3

4·5	

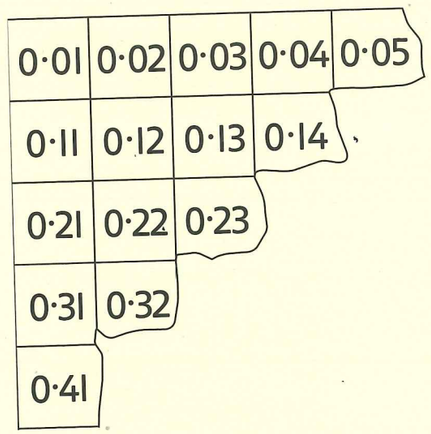
6

5·6		

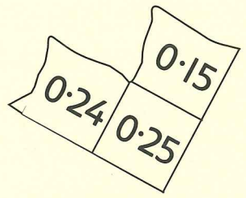
9

	9·0

I am confident with placing decimal tenths on a number square.

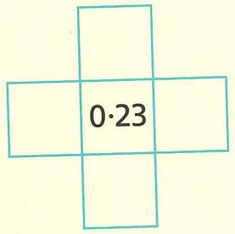


GRAB! 0·01 to 1-square

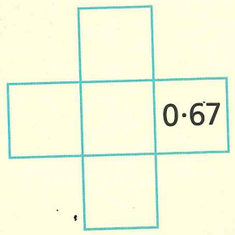


Copy and complete on squared paper.

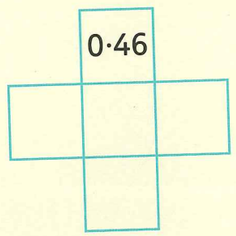
1



2



3



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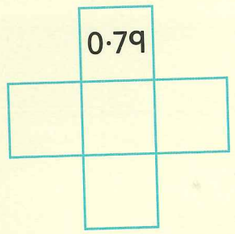


Answer these questions.

5 0·35 + 0·1 = ☐

6 0·63 − 0·1 = ☐

7 0·78 + 0·01 = ☐

8 0·94 − 0·01 = ☐

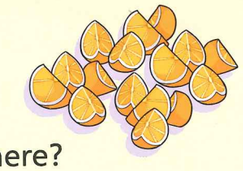
9 0·29 + 0·01 = ☐

10 0·6 − 0·01 = ☐

I am confident with placing decimal hundredths on a number square and can add and subtract tenths and hundredths.

Mental multiplication strategies

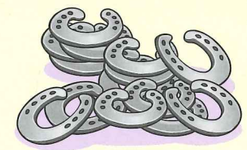
Solve these word problems.



1 For a school football tournament, 47 oranges are cut into quarters. How many quarters are there?

2 Filip cycled 28 km every day for 4 days. How far did he cycle?

3 A plant was 17 cm tall. In one month its height doubled. In the next month its height doubled again. How tall was it after two months?



4 A coat cost £118. It was then reduced to half price in a sale. What is its sale price?

5 How many horseshoes are needed for 38 horses?

6 There are 96 children who are split into groups of 4. How many groups are there?

7 A car-making factory has 256 wheels. How many cars is this enough for?

8 A charity was given a gift of £78. A second gift was double this amount. How much was it?

9 Half the number of people at a concert were adults and half of the adults were women. If there were 78 women, how many people were at the concert altogether?

THINK Make up three of your own doubling or halving word problems.

I am confident with doubling and halving as a mental method of multiplication.

Multiply these numbers by 20.

1. 24
2. 35
3. 48
4. 72
5. 57
6. 86
7. 95
8. 76
9. 68

Multiply these numbers by 25.

10. 32
11. 16
12. 52
13. 62
14. 34
15. 56
16. 85
17. 72
18. 66

Multiply these numbers by 9.

19. 38
20. 49
21. 56
22. 47
23. 66
24. 89
25. 35
26. 92
27. 71

THINK Would you prefer to use the grid method or the mental strategy you have been learning to multiply by 9? Explain why.

I am confident with using mental strategies to multiply by 20, 25 and 9.

Use mental strategies to answer these questions.

1. 69 × 9 = ☐
2. 48 × 25 = ☐
3. 39 × 20 = ☐
4. 81 × 9 = ☐
5. 38 × 25 = ☐
6. 86 × 20 = ☐
7. 74 × 9 = ☐
8. 67 × 25 = ☐
9. 77 × 20 = ☐
10. 63 × 9 = ☐
11. 91 × 25 = ☐
12. 97 × 20 = ☐
13. 72 × 9 = ☐
14. 79 × 25 = ☐
15. 89 × 20 = ☐
16. 87 × 9 = ☐

Find the missing numbers.

17. 69 × ☐ = 1725
18. 71 × ☐ = 639
19. 42 × ☐ = 1050
20. 58 × ☐ = 522

THINK Write a method explaining to a Year 4 pupil how to multiply by 20 or 25. Explain why it works.

I am confident with using mental strategies to multiply by 20, 25 and 9.