



MATHEMATICS



N.S. Yr. 6 P.43

Using relationships between addition and subtraction and adding several numbers.

Equipment

Paper, pencil.

MathSphere

© MathSphere P.O. Box 1234 Worthing BN13 2UJ www.mathsphere.co.uk

Concepts

Children should know that if one of the following facts are known, the others can be deduced without further calculation:

$$2.75 + 1.84 = 4.59 \qquad 1.84 + 2.75 = 4.59$$

$$4.59 - 1.84 = 2.75 \qquad 4.59 - 2.75 = 1.84$$

Children should be able to make small adjustments to sums to give correct answers without re-calculating the whole sum. For example:

If $4573 + 2548 = 7121$, then:

$$4570 + 2548 = 7118$$

$$7120 - 2548 = 4572$$

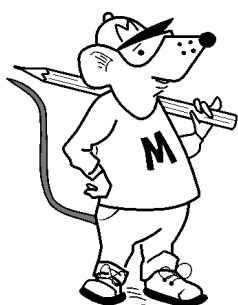
$$7110 - 4573 = 2537$$

They should be able to add together quickly several numbers such as $58 + 32 + 17$ and should spot pairs of numbers that make 10 or 100. They should also be able to add three multiples of 10 such as $50 + 20 + 70$.

They should also be able to spot equivalences such as ' $46 + 48 + 42 + 42 + 44$ is the same as $(40 \times 5) + (6 + 8 + 2 + 2 + 4) = 200 + 22 = 222$ '.

Lastly, children should be able to explain their methods and show that they have used shortcuts and logical techniques to arrive at their answers.

If you know that $1.56 + 2.30 = 3.86$, you can say straight away that $2.30 + 1.56 = 3.86$.



Yes, but did you know that this also means that $3.86 - 1.56 = 2.30$ and that $3.86 - 2.30 = 1.56$?

In these questions, you are told one fact about a sum. Write down three others without doing any more sums. The first one is done for you.

1. $2.87 + 4.56 = 7.43$

This means that $4.56 + 2.87 = 7.43$, $7.43 - 4.56 = 2.87$ and $7.43 - 2.87 = 4.56$

2. $8.53 + 5.88 = 14.41$

3. $4.55 + 3.22 = 7.77$

4. $5.92 + 3.42 = 9.34$

5. $5.44 + 8.23 = 13.67$

6. $2.94 + 6.82 = 9.76$

7. $12.74 - 3.85 = 8.89$

8. $45.4 - 6.45 = 38.95$

9. $9.67 - 2.53 = 7.14$

10. $7.88 - 3.61 = 4.27$

11. $4.62 - 2.58 = 2.04$

12. $29.97 - 12.74 = 17.23$

These are getting tricky - decimals and everything!

Have you got your thinking caps on?



Don't forget, if you know that $7.34 + 1.32 = 8.66$,
you can say straight away that $1.32 + 7.34 = 8.66$.



Great! Remember too that this
also means that
 $8.66 - 7.34 = 1.32$ and that
 $8.66 - 1.32 = 7.34$.

In these questions, you are told one fact about a sum. Write down three others without doing any more sums. The first one is done for you.

1. $5.48 + 4.23 = 9.71$

This means that $4.23 + 5.48 = 9.71$, $9.71 - 4.23 = 5.48$ and $9.71 - 5.48 = 4.23$

2. $16.93 + 8.23 = 25.16$

3. $9.84 + 42.74 = 52.58$

4. $8.58 + 4.77 = 13.35$

5. $92.6 + 1.09 = 93.69$

6. $5.73 + 7.56 = 13.29$

7. $7.48 - 3.64 = 3.84$

8. $23.94 - 18.45 = 5.49$

9. $6.48 - 2.63 = 3.85$

10. $99.56 - 56.28 = 43.28$

11. $7.56 - 4.28 = 3.28$

12. $67.36 - 46.96 = 20.40$

You must be getting quite good at these by
now. Well done!



In these questions, you need to adjust the numbers a little to give you the correct answers.



Look at the first one very carefully to see what we mean.

1. If $195 + 238 = 433$, what is $433 - 190$?
You know that **$433 - 195 = 238$** .
This means that **$433 - 190 = 243$**
2. If $256 + 445 = 701$, what is $700 - 445$?
3. If $594 + 126 = 720$, what is $720 - 590$?
4. If $2.45 - 1.67 = 0.78$, what is $1.60 + 0.78$?
5. If $4.62 + 3.63 = 8.25$, what is $8.25 - 3.68$?
6. If $8.91 - 4.37 = 4.54$, what is $4.37 + 4.74$?
7. If $894 - 538 = 356$, what is $894 - 533$?
8. If $855 + 488 = 1\,343$, what is $1\,343 - 480$?
9. If $3\,462 + 4\,583 = 8\,045$, what is $8\,045 - 3\,662$?
10. If $564 - 372 = 192$, what is $564 - 172$?
11. If $23.89 + 15.34 = 39.23$, what is $41.23 - 15.34$?
12. If $673 + 328 = 1\,001$, what is $901 - 328$?

Have you understood the idea? We made a small change to the original sum to get the answer we wanted. No calculator needed!



In these questions, you need to adjust the numbers a little to give you the correct answers.



Look at the first one very carefully to see what we mean.



1. If $16.87 + 6.48 = 23.35$, what is $23.35 - 6.28$?
You know that **$23.35 - 6.48 = 16.87$** .
This means that **$23.35 - 6.28 = 17.07$**
2. If $528 + 965 = 1\,493$, what is $518 + 965$?
3. If $624 + 333 = 957$, what is $957 - 313$?
4. If $4.95 - 1.57 = 3.38$, what is $3.38 + 1.37$?
5. If $2.11 + 5.99 = 8.10$, what is $8.00 - 5.99$?
6. If $9.47 - 6.54 = 2.93$, what is $2.73 + 6.54$?
7. If $694 - 428 = 266$, what is $674 - 428$?
8. If $638 + 635 = 1\,273$, what is $1\,273 - 615$?
9. If $4\,833 + 7\,436 = 12\,269$, what is $12\,269 - 7\,636$?
10. If $945 - 388 = 557$, what is $577 + 388$?
11. If $42.77 + 37.42 = 80.19$, what is $78.19 - 37.42$?
12. If $974 + 497 = 1\,471$, what is $1\,471 - 994$?

Have you understood the idea? We made a small change to the original sum to get the answer we wanted. No calculator needed!



Say which numbers go in the boxes:

1. $23 + \square = 38 + 12$

2. $10 + 22 + 8 + \square = 69$

3. $\square + 56 + 34 = 130$

4. $78 + \square = 200$

5. $45 + 40 + 15 = \square$

6. $84 + \square + 26 = 300$

7. $62 + 28 + \square = 130$

8. $74 + 36 + 58 = \square$

9. $8 + 42 + 7 + \square = 88$

10. $63 + 27 + 9 + 11 = \square$

11. $80 + 120 + \square = 180 + 180 + 180$

12. $16 + 34 + 29 + 31 = \square$

Don't forget to look for shortcuts with this type of work.



Say which numbers go in the boxes:

1. $78 + \square = 45 + 55$

2. $95 + 15 + 90 + \square = 370$

3. $\square + 73 + 17 = 300$

4. $56 + \square = 10 + 70$

5. $63 + 67 + 13 = \square$

6. $60 + \square + 45 = 120$

7. $46 + 44 + \square = 99$

8. $63 + 87 + 29 = \square$

9. $63 + 27 + \square = 96$

10. $54 + 56 + 23 + 37 = \square$

11. $63 + 67 + \square = 89 + 21 + 40$

12. $9 + 53 + 21 + 37 = \square$

Work very carefully with these questions. Look for short cuts.



Without doing any written working, answer the following questions:

1. $90 + 60 + 40$
2. $80 + 30 + 50 + 70$
3. $20 + 80 + 40$
4. $80 + 50 + 30 + 20 + 60$
5. $40 + 20 + 20 + 40$
6. $90 + 40 + 50 + 10 + 40$
7. $50 + 30 + 70$
8. $80 + 60 + 90 + 30 + 70$
9. $90 + 50 + 60$
10. $60 + 60 + 60 + 60 + 60$
11. $70 + 60 + 20 + 50 + 20$
12. $10 + 80 + 30$
13. $90 + 50 + 40 + 70 + 30$
14. $90 + 30 + 50 + 30 + 70$
15. $80 + 130 + 180$
16. $90 + 120 + 450$
17. $80 + 160 + 70 + 150 + 10$
18. $10 + 160 + 150$
19. $50 + 50 + 60 + 70 + 190$
20. $10 + 10 + 10 + 10 + 10$

I like a hard one to finish with, but I expect you would like an easy one after all that work, so we made number 20 a piece of cake.



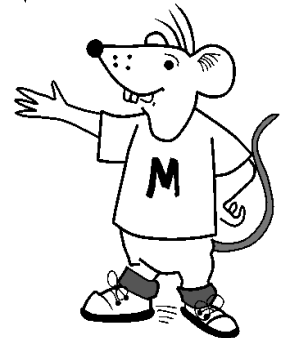
Dundee, I hope. Yum!



Without doing any written working, answer the following questions:

1. $120 + 90 + 80$
2. $80 + 60 + 50$
3. $90 + 50 + 30 + 40$
4. $70 + 30 + 90 + 50$
5. $340 + 60 + 70 + 40$
6. $230 + 170 + 60 + 40$
7. $60 + 90 + 70 + 50 + 80$
8. $50 + 60 + 120 + 80$
9. $70 + 40 + 30 + 100$
10. $90 + 80 + 50 + 50$
11. $50 + 40 + 450 + 110$
12. $90 + 40 + 30 + 50$
13. $90 + 40 + 30 + 80$
14. $80 + 20 + 40 + 60$
15. $60 + 50 + 40 + 30$
16. $90 + 50 + 60 + 60$
17. $490 + 10 + 60$
18. $940 + 20 + 30$
19. $320 + 320 + 320$
20. $150 + 150 + 150 + 150$

You should be pretty good at place value by now with all this practice with tens!

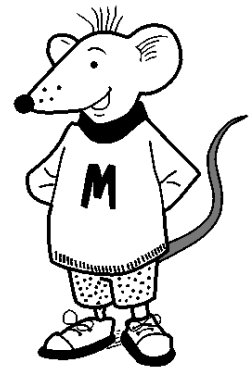


Without doing any written working, answer the following questions:

1. $82 + 83 + 85$
2. $37 + 30 + 35 + 38$
3. $92 + 97 + 92$
4. $52 + 54 + 54 + 55 + 52$
5. $39 + 35 + 36 + 37$
6. $29 + 25 + 24 + 23 + 26$
7. $38 + 34 + 34$
8. $26 + 26 + 26 + 26 + 26$
9. $90 + 93 + 98$
10. $39 + 37 + 33 + 32 + 37$
11. $53 + 55 + 56 + 54 + 53$
12. $19 + 16 + 14$
13. $15 + 13 + 16 + 12 + 14$
14. $17 + 16 + 16 + 18$
15. $49 + 46 + 48$
16. $38 + 36 + 37$
17. $29 + 27 + 26 + 25 + 25$
18. $129 + 125 + 128$
19. $82 + 83 + 86 + 89 + 82$
20. $92 + 91 + 93 + 94 + 92$

You will notice with these sums that the tens of all the numbers in a question are the same.

In number 1, there are three 80s which are 240 and another $2 + 3 + 5$, so the answer is 250.

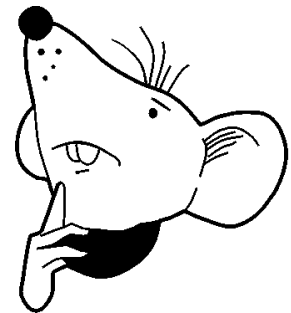


Without doing any written working, answer the following questions:

1. $37 + 38 + 35$
2. $28 + 26 + 27$
3. $27 + 23 + 28 + 21 + 27$
4. $49 + 48 + 46$
5. $17 + 19 + 13 + 19 + 17$
6. $49 + 42 + 43 + 45 + 48$
7. $52 + 54 + 52$
8. $68 + 65 + 63$
9. $16 + 18 + 17 + 14 + 19$
10. $63 + 67 + 62 + 63 + 64$
11. $54 + 53 + 58 + 53 + 55$
12. $35 + 35 + 38$
13. $38 + 34 + 36 + 38 + 32$
14. $57 + 56 + 54$
15. $26 + 27 + 25$
16. $53 + 57 + 58$
17. $53 + 52 + 59 + 59 + 57$
18. $49 + 48 + 43$
19. $12 + 17 + 18 + 15 + 18$
20. $74 + 73 + 78 + 79 + 72$

You will notice with these sums that the tens of all the numbers in a question are the same.

In number 1, there are three 30s which are 90 and another $7 + 8 + 5$, so the answer is 110.



Answers**Page 3**

1. $4.56 + 2.87 = 7.43$,	$7.43 - 4.56 = 2.87$	and	$7.43 - 2.87 = 4.56$
2. $5.88 + 8.53 = 14.41$,	$14.41 - 5.88 = 8.53$	and	$14.41 - 8.53 = 5.88$
3. $3.22 + 4.55 = 7.77$,	$7.77 - 3.22 = 4.55$	and	$7.77 - 4.55 = 3.22$
4. $3.42 + 5.92 = 9.34$,	$9.34 - 3.42 = 5.92$	and	$9.34 - 5.92 = 3.42$
5. $8.23 + 5.44 = 13.67$,	$13.67 - 8.23 = 5.44$	and	$13.67 - 5.44 = 8.23$
6. $6.82 + 2.94 = 9.76$,	$9.76 - 6.82 = 2.94$	and	$9.76 - 2.94 = 6.82$
7. $12.74 - 8.89 = 3.85$,	$8.89 + 3.85 = 12.74$	and	$3.85 + 8.89 = 12.74$
8. $45.4 - 38.95 = 6.54$,	$38.95 + 6.54 = 45.4$	and	$6.54 + 38.95 = 45.4$
9. $9.67 - 7.14 = 2.53$,	$7.14 + 2.53 = 9.67$	and	$2.53 + 7.14 = 9.67$
10. $7.88 - 4.27 = 3.61$,	$4.27 + 3.61 = 7.88$	and	$3.61 + 4.27 = 7.88$
11. $4.62 - 2.04 = 2.58$,	$2.04 + 2.58 = 4.62$	and	$2.58 + 2.04 = 4.62$
12. $29.97 - 17.23 = 12.74$,	$17.23 + 12.74 = 29.97$	and	$12.74 + 17.23 = 29.97$

Page 4

1. $4.23 + 5.48 = 9.71$,	$9.71 - 4.23 = 5.48$	and	$9.71 - 5.48 = 4.23$
2. $8.23 + 16.93 = 25.16$,	$25.16 - 8.23 = 16.93$	and	$25.16 - 16.93 = 8.23$
3. $42.74 + 9.84 = 52.58$,	$52.58 - 42.74 = 9.84$	and	$52.58 - 9.84 = 42.74$
4. $4.77 + 8.58 = 13.35$,	$13.35 - 4.77 = 8.58$	and	$13.35 - 8.58 = 4.77$
5. $1.09 + 92.6 = 93.69$,	$93.69 - 92.6 = 1.09$	and	$93.69 - 1.09 = 92.6$
6. $7.56 + 5.73 = 13.29$,	$13.29 - 7.56 = 5.73$	and	$13.29 - 5.73 = 7.56$
7. $7.48 - 3.84 = 3.64$,	$3.84 + 3.64 = 7.48$	and	$3.64 + 3.84 = 7.48$
8. $23.94 - 5.49 = 18.45$,	$5.49 + 18.45 = 23.94$	and	$18.45 + 5.49 = 23.94$
9. $6.48 - 3.85 = 2.63$,	$3.85 + 2.63 = 6.48$	and	$2.63 + 3.85 = 6.48$
10. $99.56 - 43.28 = 56.28$,	$43.28 + 56.28 = 99.56$	and	$56.28 + 43.28 = 99.56$
11. $7.56 - 3.28 = 4.28$,	$3.28 + 4.28 = 7.56$	and	$4.28 + 3.28 = 7.56$
12. $67.36 - 20.40 = 46.96$,	$20.40 + 46.96 = 67.36$	and	$46.96 + 20.40 = 67.36$

Page 5

1. 243	2. 255	3. 130	4. 2.38	5. 4.57	6. 9.11
7. 361	8. 863	9. 4 383	10. 392	11. 25.89	12. 573

Page 6

1. 17.07	2. 1 483	3. 644	4. 4.75	5. 2.01	6. 9.27
7. 246	8. 658	9. 4 633	10. 965	11. 40.77	12. 477

Page 7

1. 27	2. 29	3. 40	4. 122	5. 100	6. 190
7. 40	8. 168	9. 31	10. 110	11. 340	12. 110

Page 8

1. 22	2. 170	3. 210	4. 24	5. 143	6. 15
7. 9	8. 179	9. 6	10. 170	11. 20	12. 120

Answers (Contd)

Page 9

1. 190	2. 230	3. 140	4. 240	5. 120	6. 230	7. 150
8. 330	9. 200	10. 300	11. 220	12. 120	13. 280	14. 270
15. 390	16. 660	17. 470	18. 320	19. 420	20. 50	

Page 10

1. 290	2. 190	3. 210	4. 240	5. 510	6. 500	7. 350
8. 310	9. 240	10. 270	11. 650	12. 210	13. 240	14. 200
15. 180	16. 260	17. 560	18. 990	19. 960	20. 600	

Page 11

1. 250	2. 140	3. 281	4. 267	5. 147	6. 127	7. 106
8. 130	9. 281	10. 178	11. 271	12. 49	13. 70	14. 67
15. 143	16. 111	17. 132	18. 382	19. 422	20. 462	

Page 12

1. 110	2. 81	3. 126	4. 143	5. 85	6. 227	7. 158
8. 196	9. 84	10. 319	11. 273	12. 108	13. 178	14. 167
15. 78	16. 168	17. 280	18. 140	19. 80	20. 376	