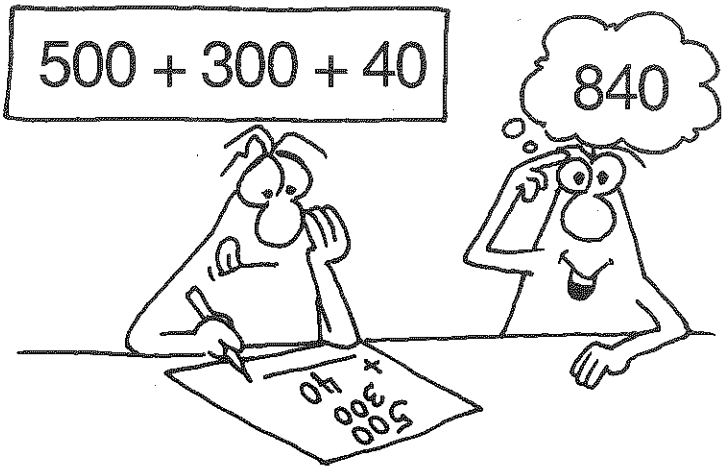
How do you do a math problem?

With paper and pencil?

Often it's faster and easier to do it in your head!



Try this one in your head.
Take it one step at a time.

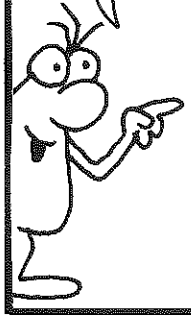
400 + 200 + 50

4 hundred plus 2 hundred is 6 hundred, plus 50 is 650.

The key is doing one step at a time. That way you have only one number to keep in your head.

TRY THESE IN YOUR HEAD.

Do one step at a time.

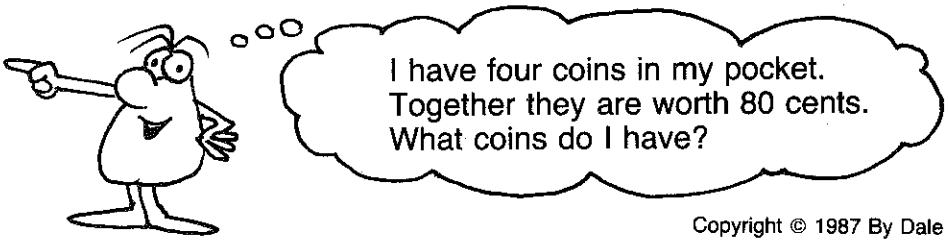


1. 300 + 200 + 40
2. 600 + 100 + 20
3. 500 + 30 + 400
4. 7000 + 2000 + 500
5. 4000 + 5000 + 400
6. 6000 + 100 + 2000
7. 700 + 4000 + 300
8. 500 + 20 + 3000
9. 50 + 400 + 30 + 5000
10. 400 + 2000 + 60 + 500

POWER BUILDER A

1. 200 + 300 = _____
2. 500 + 400 = _____
3. 600 + 500 = _____
4. 700 + 800 = _____
5. 300 + 200 + 500 = _____
6. 200 + 100 + 400 = _____
7. 700 + 300 + 200 = _____
8. 100 + 500 + 600 = _____
9. 3000 + 4000 + 1000 = _____
10. 7000 + 3000 + 2000 = _____
11. 200 + 400 + 50 = _____
12. 300 + 700 + 20 = _____
13. 500 + 300 + 70 = _____
14. 400 + 50 + 300 = _____
15. 100 + 30 + 600 = _____
16. 5000 + 400 + 2000 = _____
17. 7000 + 300 + 200 = _____
18. 4000 + 300 + 1000 = _____
19. 700 + 3000 + 50 = _____
20. 4000 + 2000 + 50 + 40 = _____

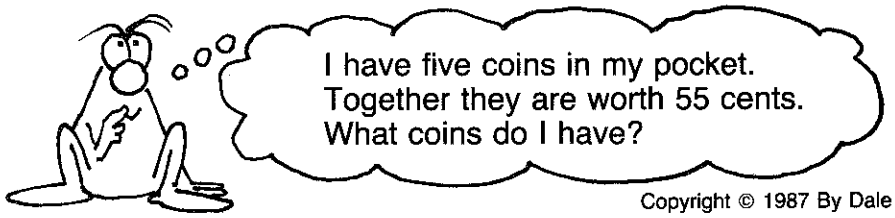
THINK IT THROUGH



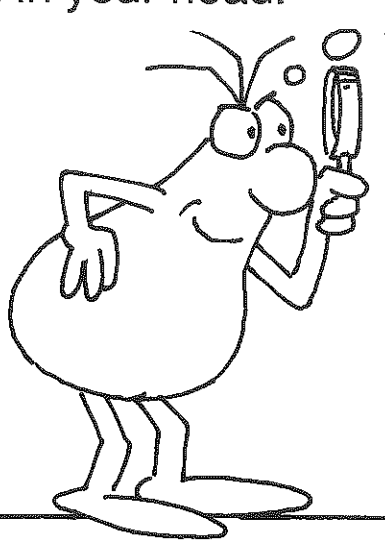
POWER BUILDER B

1. 200 + 600 + 50 = _____
2. 300 + 800 + 90 = _____
3. 30 + 700 + 500 = _____
4. 50 + 800 + 400 = _____
5. 700 + 100 + 90 = _____
6. 900 + 40 + 500 = _____
7. 600 + 800 + 20 = _____
8. 300 + 70 + 500 = _____
9. 700 + 600 + 50 + 40 = _____
10. 800 + 700 + 30 + 20 = _____
11. 300 + 7000 + 50 = _____
12. 1000 + 90 + 500 = _____
13. 800 + 70 + 5000 = _____
14. 4000 + 600 + 6000 = _____
15. 900 + 80 + 2000 = _____
16. 300 + 7000 + 400 + 50 = _____
17. 200 + 80 + 8000 = _____
18. 100 + 50 + 4000 + 2000 = _____
19. 6000 + 400 + 300 + 2000 = _____
20. 5000 + 20 + 2000 + 100 = _____

THINK IT THROUGH



Place value names can help you keep track when you add in your head.



500 + 310

5 **hundred** plus 3 **hundred** 10 is 8 **hundred** 10.

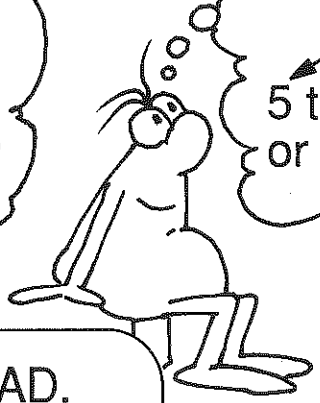
Be sure to add digits with the same place value!

430 + 500

430 + 500

9 hundred 30, or 930

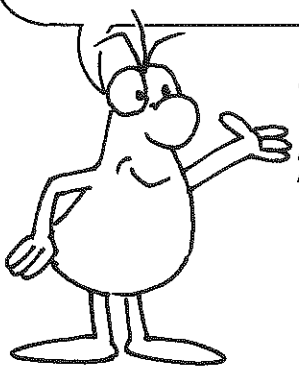
5200 + 400



5200 + 400

5 thousand 6 hundred, or 5600

TRY THESE IN YOUR HEAD.
Use place value names.

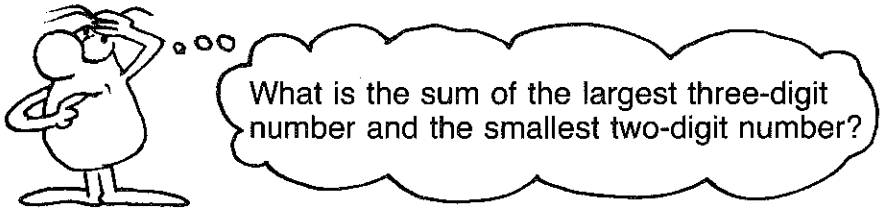


1. 340 + 600
2. 280 + 500
3. 630 + 700
4. 700 + 360
5. 800 + 240
6. 2400 + 500
7. 3200 + 700
8. 400 + 3500
9. 200 + 7600
10. 4100 + 400

POWER BUILDER A

1. 540 + 200 = _____
2. 170 + 400 = _____
3. 420 + 300 = _____
4. 500 + 430 = _____
5. 600 + 250 = _____
6. 200 + 720 = _____
7. 400 + 850 = _____
8. 600 + 740 = _____
9. 930 + 500 = _____
10. 870 + 300 = _____
11. 800 + 870 = _____
12. 600 + 990 = _____
13. 230 + 800 = _____
14. 890 + 400 = _____
15. 660 + 600 = _____
16. 500 + 550 = _____
17. 2600 + 300 = _____
18. 8100 + 500 = _____
19. 600 + 3300 = _____
20. 4200 + 500 = _____

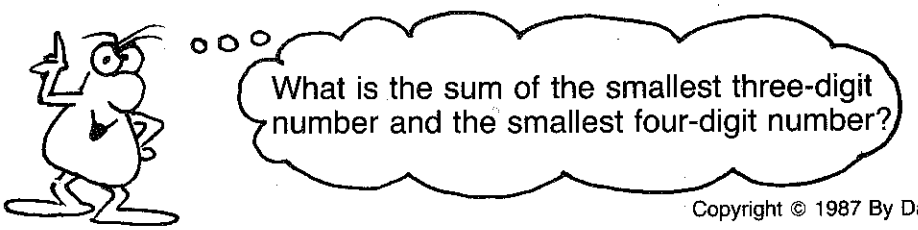
THINK IT THROUGH



POWER BUILDER B

1. 350 + 200 = _____
2. 190 + 500 = _____
3. 720 + 100 = _____
4. 460 + 400 = _____
5. 800 + 180 = _____
6. 300 + 350 = _____
7. 500 + 720 = _____
8. 950 + 400 = _____
9. 780 + 800 = _____
10. 750 + 300 = _____
11. 950 + 900 = _____
12. 300 + 770 = _____
13. 490 + 700 = _____
14. 650 + 600 = _____
15. 750 + 700 = _____
16. 820 + 900 = _____
17. 3100 + 700 = _____
18. 200 + 4500 = _____
19. 800 + 6100 = _____
20. 3300 + 400 = _____

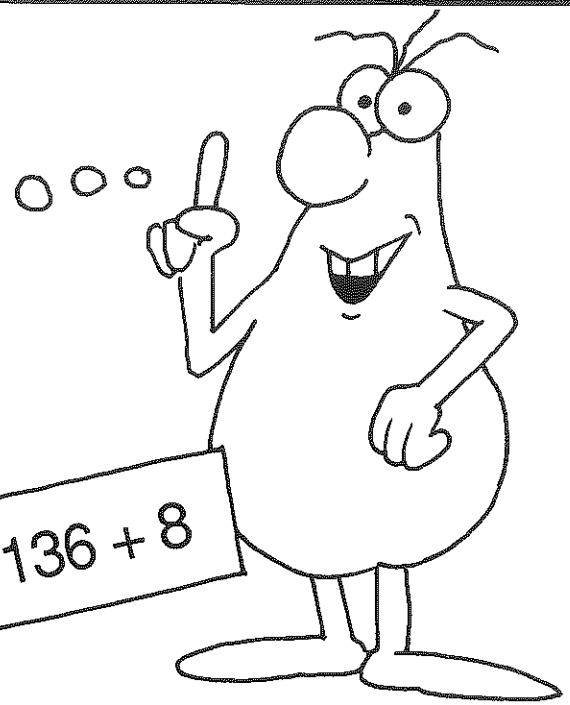
THINK IT THROUGH



LESSON 3 USING WHAT YOU KNOW

Knowing one basic addition fact can help you add other problems in your head.

For example . . . $6 + 8 = 14$



That fact can help you add these:

$56 + 8$ $76 + 8$ $136 + 8$

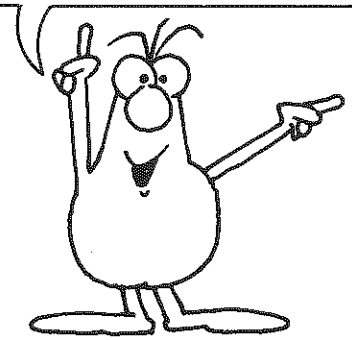
How? Look at the endings:

$56 + 8$ is $50 + 14$ or 64
$76 + 8$ is $70 + 14$ or 84
$136 + 8$ is $130 + 14$ or 144

It works when there are zeros, too.

$560 + 80$ is $500 + 140$ or 640
$760 + 80$ is $700 + 140$ or 840

TRY THESE IN YOUR HEAD.
Use what you know!

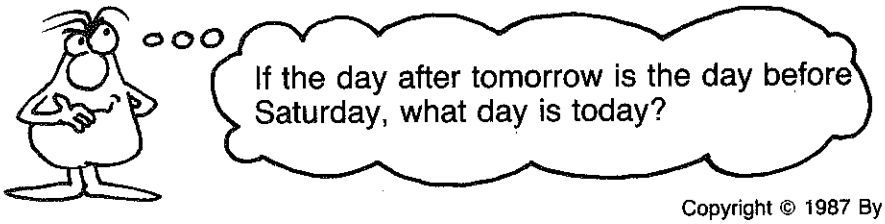


1. $47 + 5$
2. $87 + 5$
3. $137 + 5$
4. $470 + 50$
5. $770 + 50$
6. $48 + 9$
7. $78 + 9$
8. $138 + 9$
9. $380 + 90$
10. $580 + 90$

POWER BUILDER A

1. 8 + 5 = _____
2. 28 + 5 = _____
3. 338 + 5 = _____
4. 80 + 50 = _____
5. 480 + 50 = _____
6. 7 + 4 = _____
7. 47 + 4 = _____
8. 847 + 4 = _____
9. 8 + 7 = _____
10. 58 + 7 = _____
11. 6 + 9 = _____
12. 56 + 9 = _____
13. 456 + 9 = _____
14. 560 + 90 = _____
15. 260 + 90 = _____
16. 7 + 8 = _____
17. 47 + 8 = _____
18. 647 + 8 = _____
19. 470 + 80 = _____
20. 170 + 80 = _____

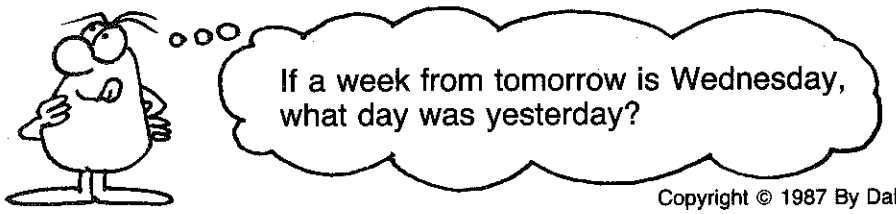
THINK IT THROUGH



POWER BUILDER B

1. 7 + 6 = _____
2. 17 + 6 = _____
3. 327 + 6 = _____
4. 70 + 60 = _____
5. 470 + 60 = _____
6. 5 + 8 = _____
7. 35 + 8 = _____
8. 285 + 8 = _____
9. 470 + 80 = _____
10. 170 + 80 = _____
11. 9 + 4 = _____
12. 39 + 4 = _____
13. 279 + 4 = _____
14. 190 + 40 = _____
15. 890 + 40 = _____
16. 6 + 5 = _____
17. 36 + 5 = _____
18. 146 + 5 = _____
19. 360 + 50 = _____
20. 860 + 50 = _____

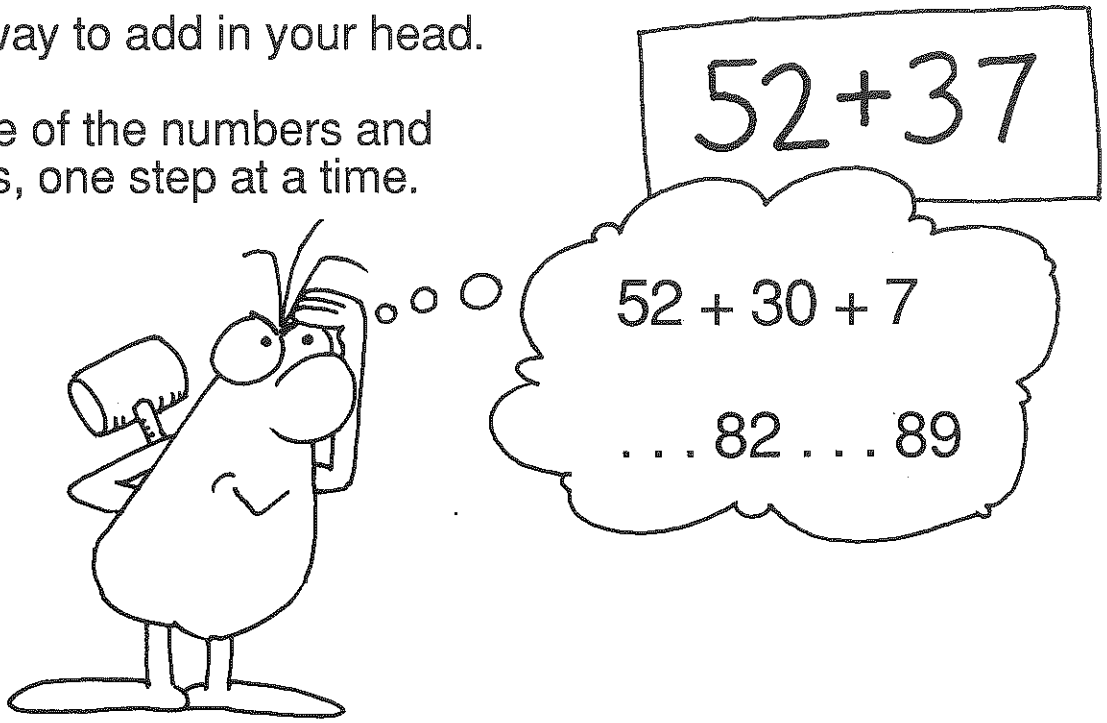
THINK IT THROUGH



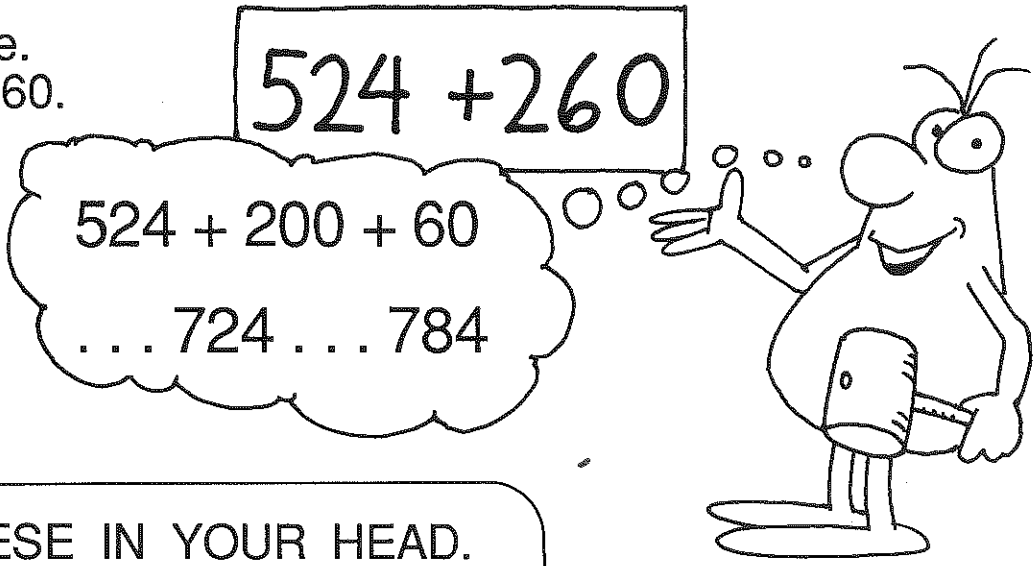
LESSON 4 BREAK IT UP

Here's one way to add in your head.

Break up one of the numbers and add the parts, one step at a time. Like this . . .



Try this one. Break up 260.



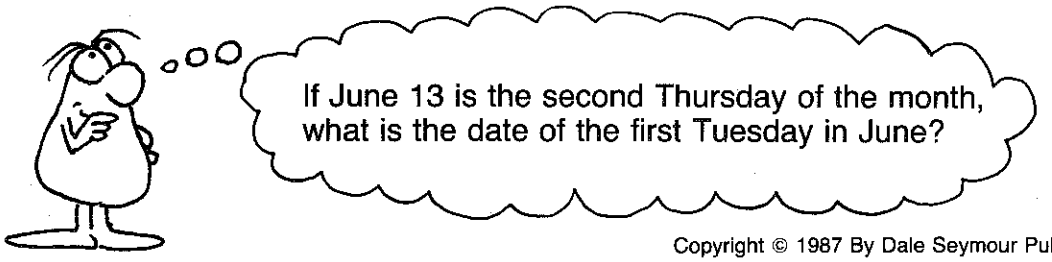
TRY THESE IN YOUR HEAD.
Break up one of the numbers.

1. 48 + 21	**3.** 34 + 52	**7.** 400 + 231
2. 53 + 34	**4.** 456 + 120	**8.** 456 + 42
	5. 438 + 340	**9.** 381 + 405
	6. 629 + 310	**10.** 705 + 220

POWER BUILDER A

1. 247 + 130 = _____
2. 575 + 203 = _____
3. 839 + 140 = _____
4. 153 + 530 = _____
5. 609 + 180 = _____
6. 545 + 320 = _____
7. 258 + 320 = _____
8. 675 + 120 = _____
9. 431 + 506 = _____
10. 274 + 310 = _____
11. 205 + 831 = _____
12. 335 + 450 = _____
13. 453 + 502 = _____
14. 426 + 403 = _____
15. 220 + 354 = _____
16. 514 + 405 = _____
17. 328 + 550 = _____
18. 805 + 172 = _____
19. 506 + 340 = _____
20. 263 + 420 = _____

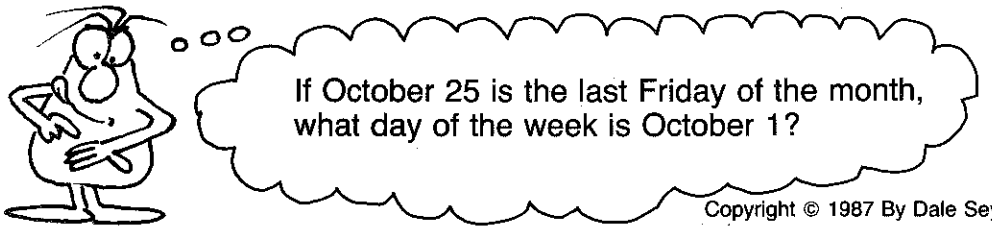
THINK IT THROUGH



POWER BUILDER B

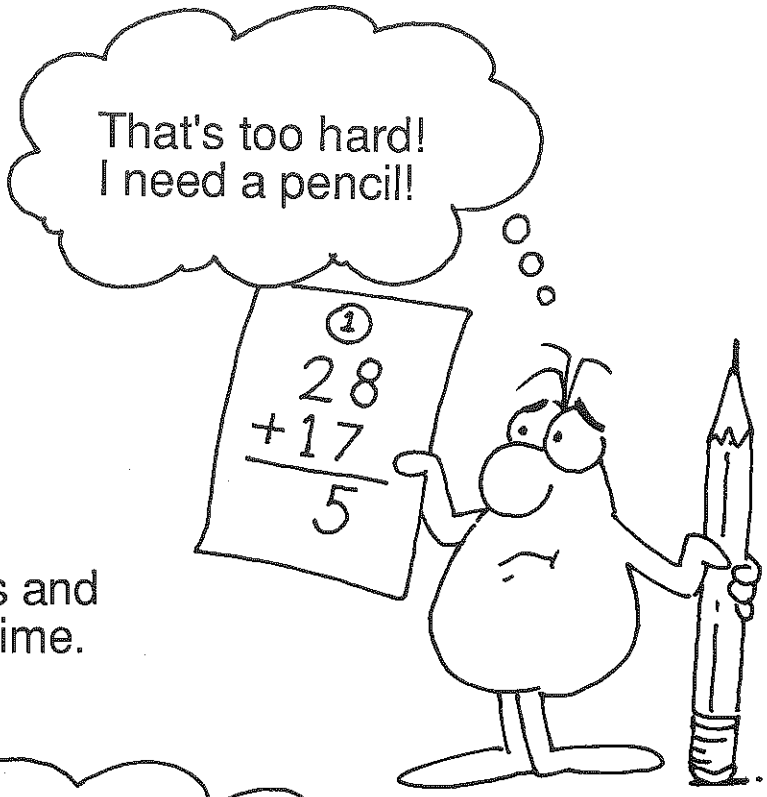
1. 315 + 210 = _____
2. 465 + 301 = _____
3. 746 + 150 = _____
4. 241 + 530 = _____
5. 508 + 260 = _____
6. 412 + 530 = _____
7. 627 + 370 = _____
8. 542 + 305 = _____
9. 418 + 410 = _____
10. 516 + 202 = _____
11. 104 + 625 = _____
12. 455 + 220 = _____
13. 856 + 102 = _____
14. 169 + 530 = _____
15. 428 + 460 = _____
16. 314 + 504 = _____
17. 256 + 220 = _____
18. 724 + 203 = _____
19. 603 + 280 = _____
20. 149 + 550 = _____

THINK IT THROUGH



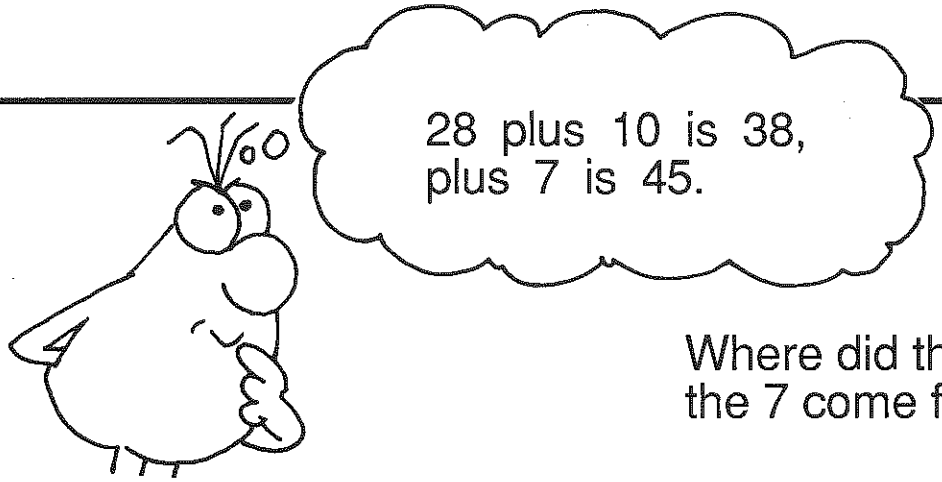
ADD IN YOUR HEAD

28 + 17



You don't need a pencil.
It's easy in your head.

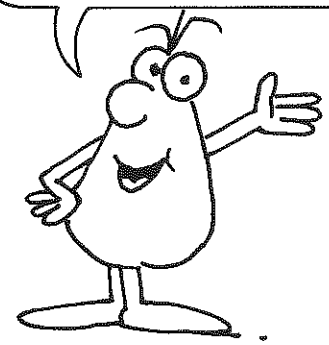
Break up one of the numbers and add the parts, one step at a time.



Where did the 10 and the 7 come from?

TRY THESE IN YOUR HEAD.

Break up one of the numbers.



1. 29 + 14
2. 53 + 28
3. 35 + 47
4. 45 + 36
5. 65 + 27
6. 58 + 24
7. 28 + 25
8. 29 + 44
9. 48 + 33
10. 56 + 35

POWER BUILDER A

1. 39 + 15 = _____
2. 48 + 25 = _____
3. 68 + 105 = _____
4. 38 + 204 = _____
5. 67 + 204 = _____
6. 35 + 38 = _____
7. 48 + 25 = _____
8. 65 + 26 = _____
9. 38 + 27 = _____
10. 53 + 19 = _____
11. 28 + 27 = _____
12. 16 + 26 = _____
13. 45 + 28 = _____
14. 58 + 17 = _____
15. 39 + 24 = _____
16. 53 + 29 = _____
17. 18 + 17 = _____
18. 45 + 48 = _____
19. 36 + 48 = _____
20. 28 + 18 = _____

THINK IT THROUGH

The sum of the ages of a mother, a father, and their son is 100 years. Each of their ages is a multiple of 10, and the mother was 30 years old when her son was born. How old is the son?

POWER BUILDER B

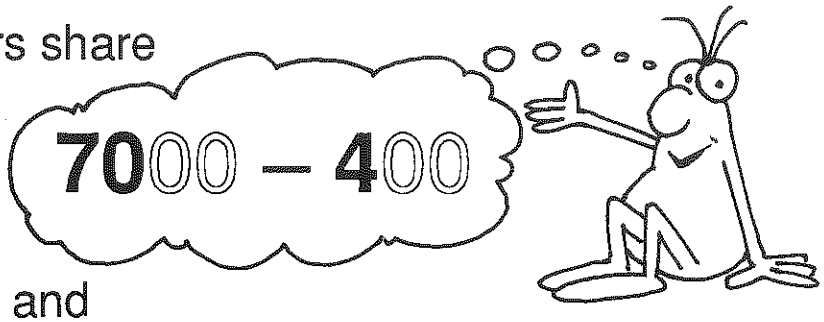
1. 26 + 19 = _____
2. 49 + 263 = _____
3. 28 + 24 = _____
4. 67 + 15 = _____
5. 78 + 175 = _____
6. 54 + 28 = _____
7. 28 + 304 = _____
8. 65 + 26 = _____
9. 77 + 15 = _____
10. 48 + 17 = _____
11. 58 + 24 = _____
12. 33 + 18 = _____
13. 45 + 37 = _____
14. 54 + 28 = _____
15. 33 + 18 = _____
16. 63 + 28 = _____
17. 27 + 55 = _____
18. 38 + 45 = _____
19. 28 + 49 = _____
20. 36 + 47 = _____

THINK IT THROUGH

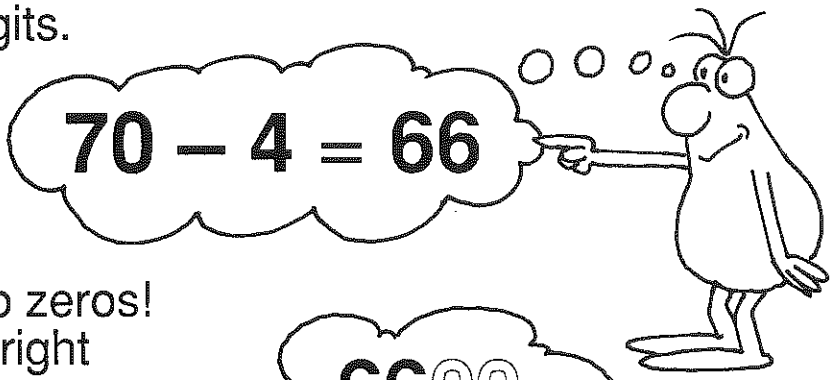
A woman's age is her husband's age with the digits reversed. The man is older. If the sum of their ages is 99 and the difference is 9, how old is each?

SUBTRACT IN YOUR HEAD	7000 − 400

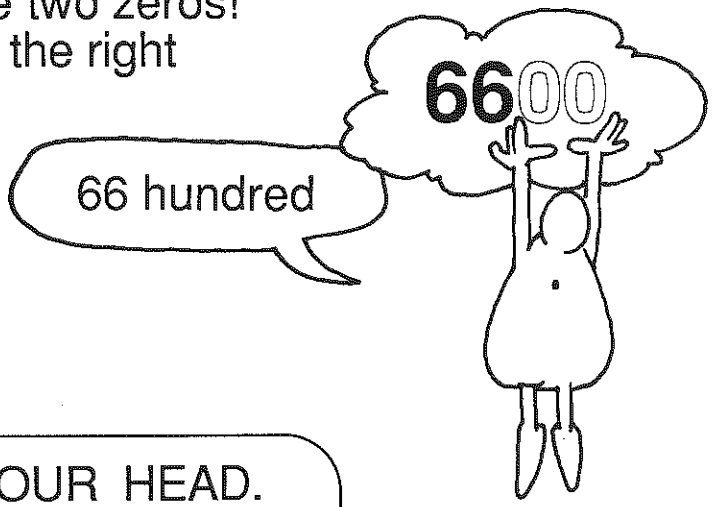
Notice that these numbers share two common zeros.



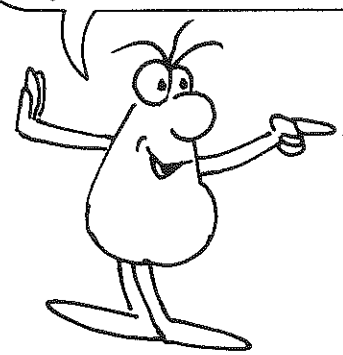
Drop those zeros for now and focus on the front-end digits.



But don't forget those two zeros! Put them back to get the right place value.



TRY THESE IN YOUR HEAD.
Drop common zeros . . . but then put them back.

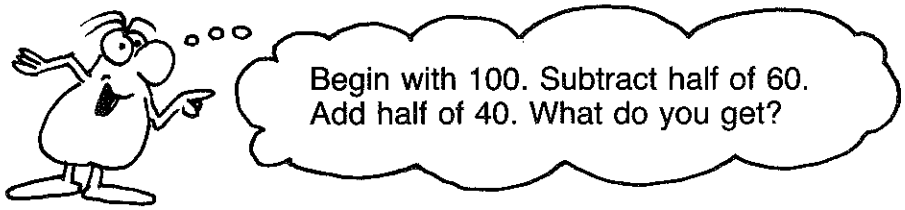


1. 700 − 300
2. 8000 − 4000
3. 17,000 − 5,000
4. 4000 − 600
5. 3000 − 500
6. 4900 − 700
7. 5000 − 200 − 100
8. 3800 − 300 − 200
9. 9600 − 7000 − 500
10. 8000 − 3000 − 600

POWER BUILDER A

1. 800 − 500 = _____
2. 900 − 200 = _____
3. 1200 − 700 = _____
4. 1500 − 900 = _____
5. 4000 − 1000 = _____
6. 8000 − 6000 = _____
7. 13,000 − 8,000 = _____
8. 17,000 − 9,000 = _____
9. 5000 − 100 = _____
10. 8000 − 500 = _____
11. 7000 − 700 = _____
12. 4000 − 4000 = _____
13. 6000 − 800 = _____
14. 1900 − 700 = _____
15. 1000 − 500 − 400 = _____
16. 10,000 − 5,000 − 4,000 = _____
17. 1800 − 900 − 500 = _____
18. 2000 − 500 − 300 = _____
19. 8000 − 1000 − 100 = _____
20. 5000 − 2000 − 200 = _____

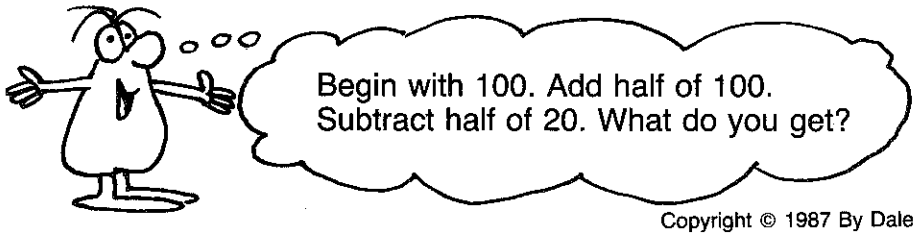
THINK IT THROUGH



POWER BUILDER B

1. 700 − 300 = _____
2. 800 − 600 = _____
3. 1100 − 500 = _____
4. 1600 − 800 = _____
5. 5000 − 2000 = _____
6. 7000 − 4000 = _____
7. 14,000 − 8,000 = _____
8. 15,000 − 9,000 = _____
9. 3000 − 100 = _____
10. 5000 − 500 = _____
11. 6000 − 600 = _____
12. 3000 − 3000 = _____
13. 7000 − 900 = _____
14. 1400 − 300 = _____
15. 1200 − 500 − 500 = _____
16. 10,000 − 5,000 − 3,000 = _____
17. 2000 − 600 − 900 = _____
18. 5000 − 700 − 100 = _____
19. 9000 − 5000 − 500 = _____
20. 4000 − 3000 − 300 = _____

THINK IT THROUGH

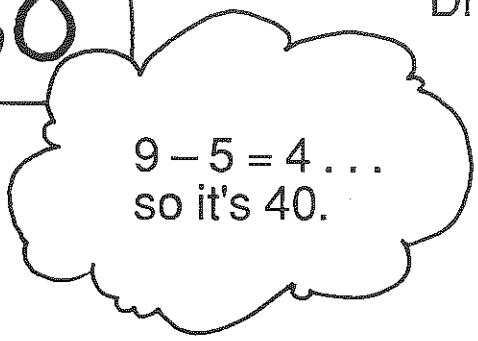


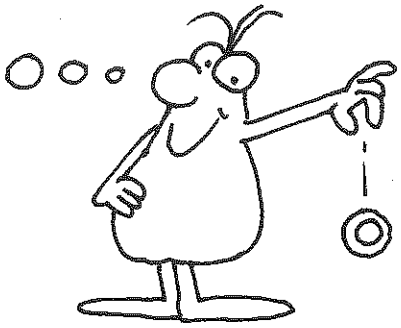
When the numbers end in zero, use a shortcut.

Drop the common zeros.

SUBTRACT IN YOUR HEAD

90 – 50



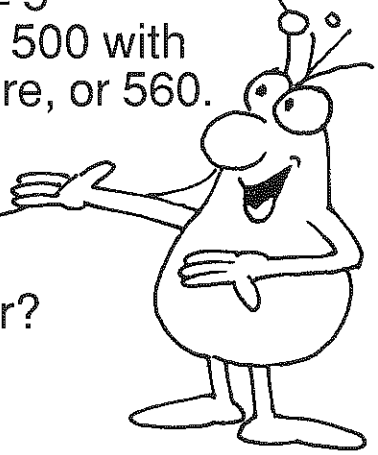


Sometimes there are different shortcuts for the same problem.

860 – 300

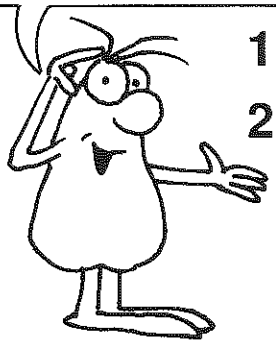
86 – 30 = 56
with one zero,
or 560.

8 – 3 = 5
That's 500 with
60 more, or 560.



Both shortcuts work.
Which do you like better?

TRY THESE IN YOUR HEAD.
What shortcut will you use?

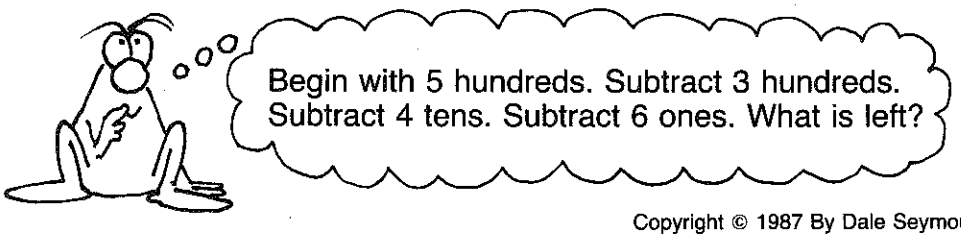


1. 80 – 30	**3.** 1400 – 500	**7.** 850 – 30
2. 800 – 600	**4.** 680 – 200	**8.** 1680 – 20
	5. 940 – 700	**9.** 2470 – 300
	6. 590 – 300	**10.** 1230 – 200

POWER BUILDER A

1. 70 − 30 = _____
2. 600 − 200 = _____
3. 1500 − 900 = _____
4. 830 − 200 = _____
5. 180 − 90 = _____
6. 130 − 70 = _____
7. 250 − 100 = _____
8. 440 − 300 = _____
9. 1850 − 30 = _____
10. 2900 − 300 = _____
11. 120 − 70 = _____
12. 150 − 90 = _____
13. 780 − 400 = _____
14. 1600 − 700 = _____
15. 170 − 80 = _____
16. 120 − 60 = _____
17. 350 − 100 = _____
18. 530 − 200 = _____
19. 1450 − 40 = _____
20. 3400 − 400 = _____

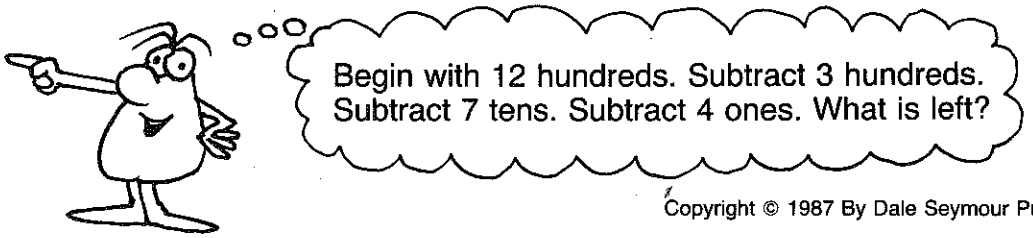
THINK IT THROUGH



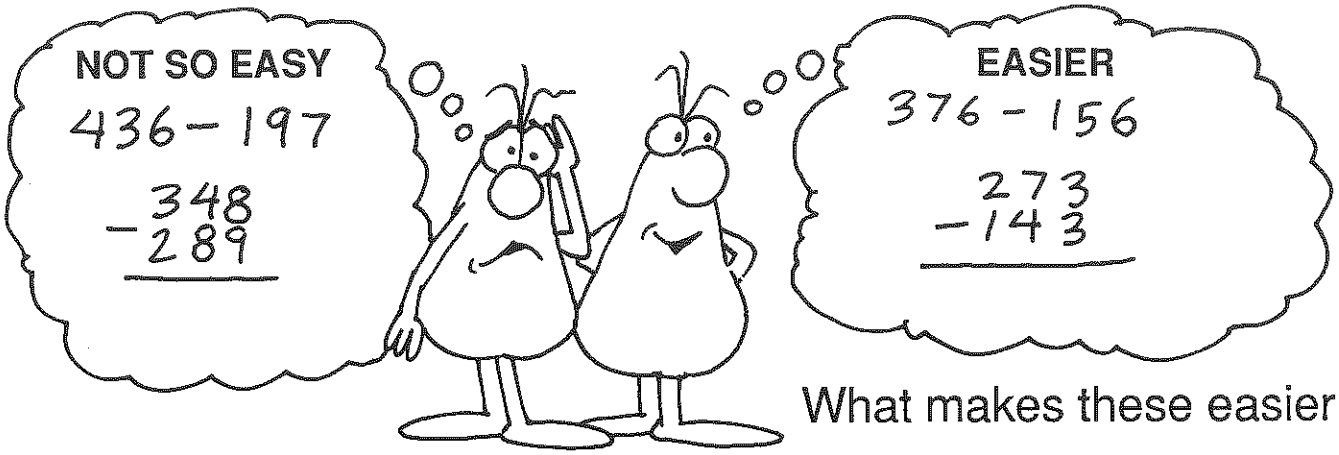
POWER BUILDER B

1. 90 − 30 = _____
2. 150 − 80 = _____
3. 800 − 500 = _____
4. 1400 − 600 = _____
5. 110 − 50 = _____
6. 540 − 200 = _____
7. 480 − 100 = _____
8. 620 − 600 = _____
9. 250 − 40 = _____
10. 1900 − 500 = _____
11. 320 − 50 = _____
12. 130 − 80 = _____
13. 1300 − 900 = _____
14. 450 − 300 = _____
15. 270 − 60 = _____
16. 1520 − 500 = _____
17. 2500 − 800 = _____
18. 1680 − 70 = _____
19. 3820 − 600 = _____
20. 450 − 400 = _____

THINK IT THROUGH



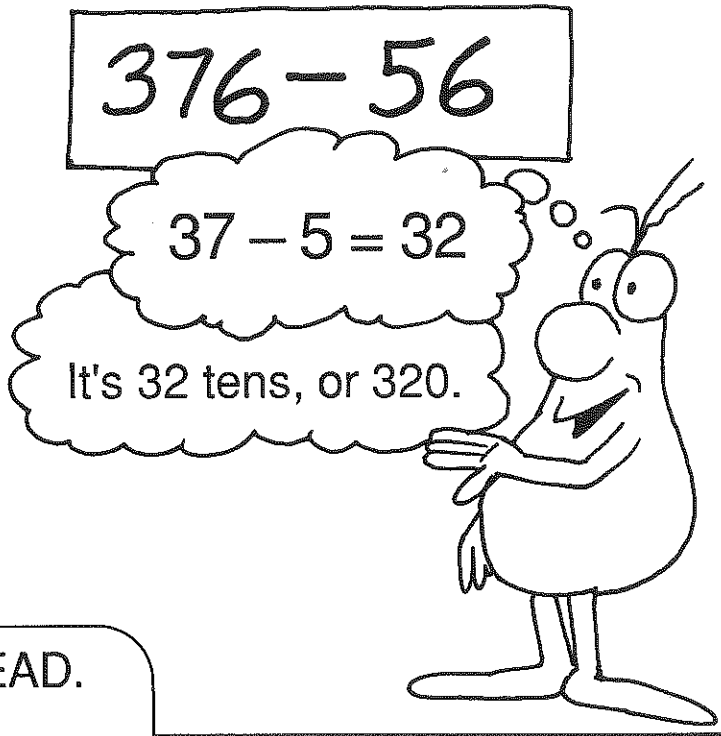
Some subtraction problems are easier than others.



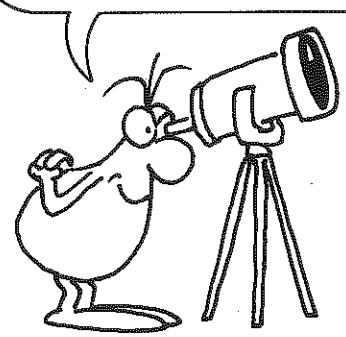
What makes these easier?

When the ending digits are the same, try this . . .

- Subtract the front-end digits.
- Then fix the place value.



TRY THESE IN YOUR HEAD.
Focus on the front end.
Then fix the place value.

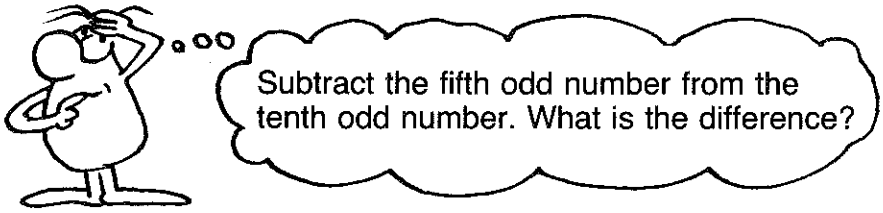


1. 56 − 6
2. 29 − 9
3. 84 − 24
4. 38 − 28
5. 319 − 9
6. 253 − 43
7. 638 − 138
8. 371 − 51
9. 592 − 192
10. 729 − 209

POWER BUILDER A

1. 35 − 5 = _____
2. 48 − 8 = _____
3. 73 − 23 = _____
4. 56 − 16 = _____
5. 82 − 2 = _____
6. 37 − 27 = _____
7. 75 − 25 = _____
8. 52 − 52 = _____
9. 48 − 28 = _____
10. 90 − 30 = _____
11. 152 − 2 = _____
12. 345 − 45 = _____
13. 224 − 24 = _____
14. 175 − 75 = _____
15. 411 − 11 = _____
16. 382 − 52 = _____
17. 241 − 21 = _____
18. 428 − 208 = _____
19. 517 − 117 = _____
20. 635 − 435 = _____

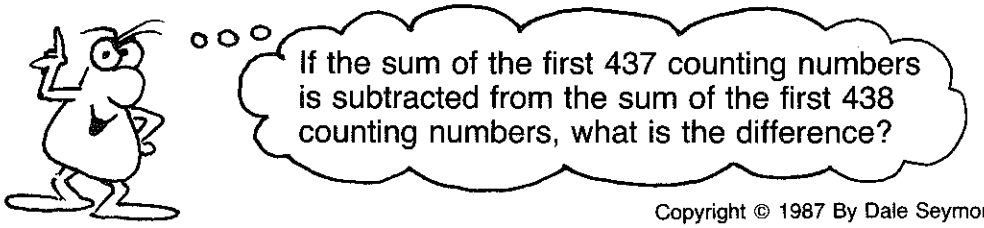
THINK IT THROUGH



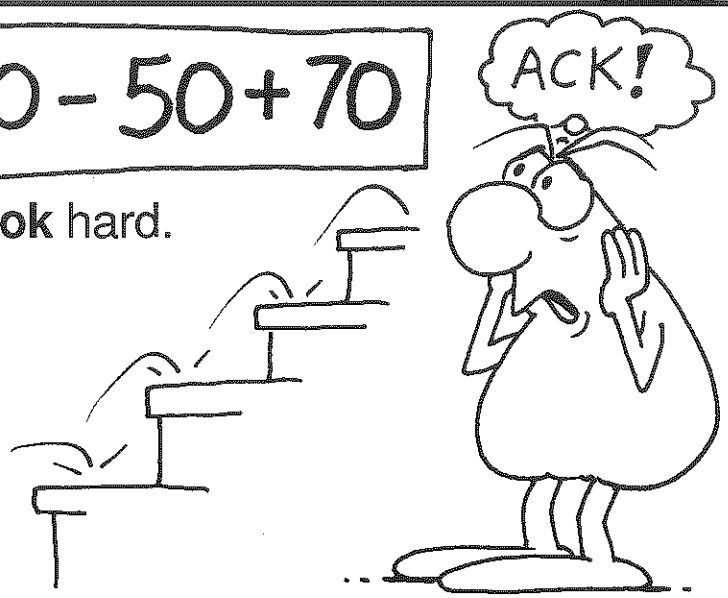
POWER BUILDER B

1. 26 − 6 = _____
2. 52 − 2 = _____
3. 89 − 19 = _____
4. 45 − 15 = _____
5. 98 − 8 = _____
6. 64 − 54 = _____
7. 43 − 43 = _____
8. 75 − 25 = _____
9. 68 − 28 = _____
10. 80 − 20 = _____
11. 227 − 7 = _____
12. 133 − 33 = _____
13. 345 − 45 = _____
14. 875 − 75 = _____
15. 619 − 19 = _____
16. 275 − 25 = _____
17. 543 − 13 = _____
18. 645 − 205 = _____
19. 275 − 175 = _____
20. 893 − 393 = _____

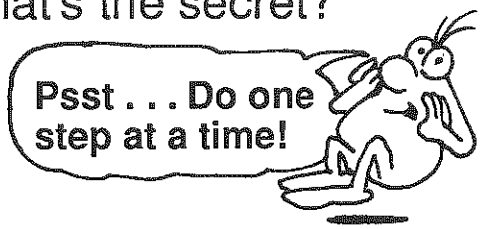
THINK IT THROUGH



$$30 + 40 - 50 + 70$$

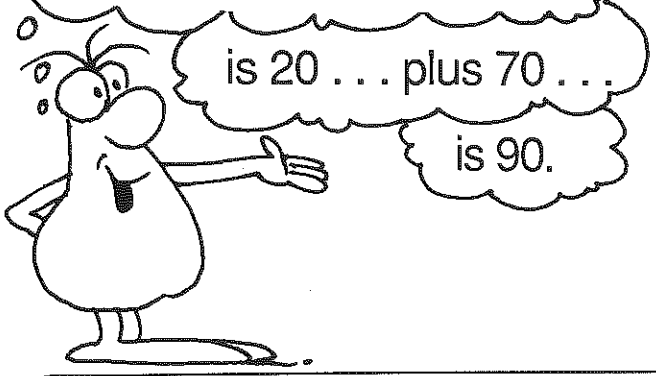


Yes, chains of numbers **look** hard.
But it's easy to do them
in your head.
What's the secret?



Think in steps.

$$30 + 40 - 50 + 70$$



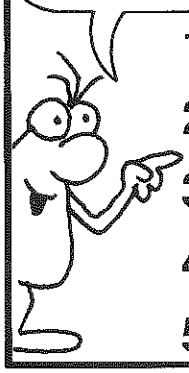
Here's another way
to think of it.

$$\underbrace{30 + 40}_{70} - 50 + 70$$

$$\underbrace{70 - 50}_{20} + 70$$

$$\underbrace{20 + 70}_{90}$$

TRY THESE IN YOUR HEAD.
Do them one step at a time.

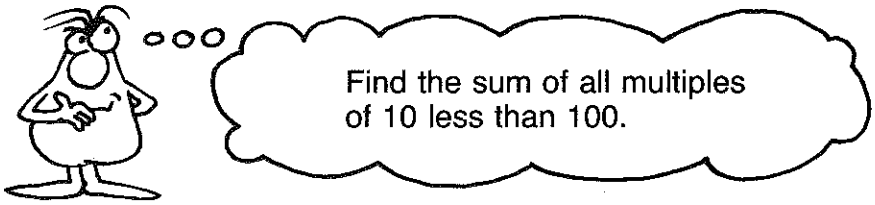


1. $20 + 60 - 30 - 10$
2. $80 - 50 + 30 + 10$
3. $60 + 30 - 40 - 40$
4. $90 - 40 + 30 - 10 - 20$
5. $80 - 50 + 30 - 20 + 10$
6. $60 + 20 - 40 - 30 + 20$
7. $50 + 10 + 20 - 30 + 20 - 30$
8. $70 - 30 + 50 - 30 + 40 + 80$
9. $30 + 20 + 30 - 50 - 10 + 60$
10. $50 + 30 - 40 - 10 + 20 + 70$

POWER BUILDER A

1. 40 + 20 − 30 = _____
2. 50 + 30 − 40 + 10 = _____
3. 70 − 50 + 50 − 20 = _____
4. 10 + 20 + 30 − 40 = _____
5. 40 + 50 − 60 + 20 = _____
6. 50 + 20 − 40 − 20 = _____
7. 70 + 20 − 80 + 20 = _____
8. 90 + 80 − 90 + 20 = _____
9. 10 + 80 − 90 + 20 = _____
10. 20 + 20 + 20 + 20 + 10 = _____
11. 50 + 30 − 20 = _____
12. 40 + 40 − 50 = _____
13. 70 − 50 + 50 − 20 = _____
14. 80 − 10 − 20 − 30 = _____
15. 70 − 70 + 30 − 20 = _____
16. 20 + 30 + 40 − 50 = _____
17. 40 + 40 − 40 − 40 = _____
18. 20 + 70 − 30 − 30 = _____
19. 10 + 50 + 20 − 70 = _____
20. 20 + 10 + 20 + 20 + 20 = _____

THINK IT THROUGH



POWER BUILDER B

1. 30 + 20 + 40 = _____
2. 20 + 30 − 40 + 50 = _____
3. 70 − 10 − 20 − 30 = _____
4. 50 + 40 − 60 + 20 = _____
5. 70 + 10 − 20 − 30 = _____
6. 60 + 30 − 40 − 20 = _____
7. 80 − 80 + 20 + 50 = _____
8. 70 + 20 − 50 + 30 = _____
9. 40 + 30 + 20 − 10 = _____
10. 80 + 10 − 20 − 30 = _____
11. 50 + 30 − 40 = _____
12. 70 + 20 − 40 − 40 = _____
13. 40 + 20 − 50 + 30 = _____
14. 70 + 20 − 20 + 10 = _____
15. 40 + 50 − 50 + 30 = _____
16. 70 + 20 − 30 − 30 = _____
17. 20 + 20 + 20 + 20 − 10 = _____
18. 90 − 80 + 70 − 60 = _____
19. 40 − 30 + 20 − 10 = _____
20. 90 − 20 − 30 − 40 = _____

THINK IT THROUGH