

HANDY TECHNIQUES

THE MATHEMATICS MAGAZINE FOR GRADE SCHOOL

by JP Saldaña

“Ramon, do you want to know a new technique I learned from my Math teacher?” asked Anton.

“Will it help me solve numbers fast?” wondered Ramon.

“It will if you multiply numbers that end with a 0 or a 5,” replied Anton.

“I would like to learn new things. Tell me about that technique!” exclaimed Ramon.

“What do you notice each time you multiply a number with another number that ends with a zero?” tested Anton.

“Let us see: $10 \times 43 = 430$, $20 \times 21 = 420$, and $56 \times 300 = 16\,800$. They all end in zero,” realized Ramon.

“That is right! If you multiply a number with another number that ends in zero, expect the product to have a 0 as its last digit. Just multiply the nonzeros first, and then copy the number of zeros of the factors to your product,” stated Anton.





“What if you multiply a number with another number that ends in five?” asked Ramon.

“Uhm, let us examine again. $15 \times 4 = 60$, $32 \times 5 = 160$, $25 \times 7 = 175$, and $43 \times 5 = 215$. The product ends in either a 0 or a 5. The product will have 0 as its last digit if you multiply an even number with a number that ends in 5. It will have 5 as its last digit if you multiply an odd number with a number ends in 5,” stated

Anton. “In 15×4 , you can distribute 4 by the sum of 10 and 5. That is, $15 \times 4 = (10 + 5) \times 4$.

$(10 + 5) \times 4 = 10 \times 4 + 5 \times 4 \rightarrow$ using the distributive property

$10 \times 4 = 40 \rightarrow$ using the strategy on multiplying by 10

Now, you know that 5 is half of 10. 5×4 is therefore half of 10×4 .

$$\begin{aligned}(10 + 5) \times 4 &= \underbrace{10 \times 4} + \underbrace{5 \times 4} \\ &= 40 + \text{half of } 10 \times 4 \text{ which is } 20 \\ &= 40 + 20 \\ &= 60\end{aligned}$$

“I will remember this technique. It comes in handy for certain situations,” said Ramon.



Try This!

1. $8 \times 2\,000 =$
2. $130 \times 70 =$
3. $21 \times 100 =$
4. $6\,300 \times 20 =$
5. $40 \times 30 =$
6. $710 \times 20 =$
7. $60 \times 80 =$
8. $200 \times 40 =$
9. $320 \times 4 =$
10. $40 \times 500 =$
11. $25 \times 12 =$
12. $45 \times 30 =$
13. $14 \times 15 =$
14. $35 \times 7 =$
15. $55 \times 3 =$
16. $705 \times 8 =$
17. $65 \times 20 =$
18. $8 \times 45 =$
19. $15 \times 9 =$
20. $16 \times 15 =$



21. $195 \times 4 =$
22. $55 \times 55 =$
23. $105 \times 9 =$
24. $995 \times 6 =$
25. $100 \times 125 \times 8 =$
26. $(3 + 2) \times 9 =$
27. $15 \times (10 + 6) =$
28. $(4 + 25) \times 10 =$
29. $34 \times 30 =$
30. $23 \times 18 =$
31. $(7 + 12) \times 3 =$
32. $(6 + 5) \times 5 =$
33. $(40 + 2) \times 7 =$
34. $60 \times 20 =$
35. $11 \times (4 + 6) =$
36. $8 \times (10 + 5) =$
37. $37 \times 200 =$
38. $70 \times 180 =$
39. $5 \times (13 + 9) =$
40. $21 \times 90 =$

ANSWERS:

- | | |
|------------|-------------|
| 1) 1 600 | 21) 780 |
| 2) 9 100 | 22) 3 025 |
| 3) 2 100 | 23) 945 |
| 4) 126 000 | 24) 5 970 |
| 5) 1 200 | 25) 100 000 |
| 6) 14 200 | 26) 45 |
| 7) 4 800 | 27) 240 |
| 8) 8 000 | 28) 290 |
| 9) 1 280 | 29) 1 020 |
| 10) 20 000 | 30) 414 |
| 11) 300 | 31) 57 |
| 12) 1 350 | 32) 55 |
| 13) 210 | 33) 294 |
| 14) 245 | 34) 1 200 |
| 15) 165 | 35) 110 |
| 16) 5 640 | 36) 120 |
| 17) 1 300 | 37) 6 400 |
| 18) 360 | 38) 12 600 |
| 19) 135 | 39) 110 |
| 20) 240 | 40) 1 890 |