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NCERT Class 6 Solutions: Whole Numbers (Chapter 2) Exercise 2.2 – Part 1

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Q-1 Find the sum by suitable rearrangement:

1. $837 + 208 + 363$
2. $1962 + 453 + 1538 + 647$

Solution:

The idea is to pair the numbers so that their least significant (right-most) digits add to either 5 or better still to 10. For example when asked to add $11 + 12 + 19$. First do $11 + 19 = 30$ (notice how the total has 0 in right-most digit) . Now it is easy to $30 + 12 = 42$.

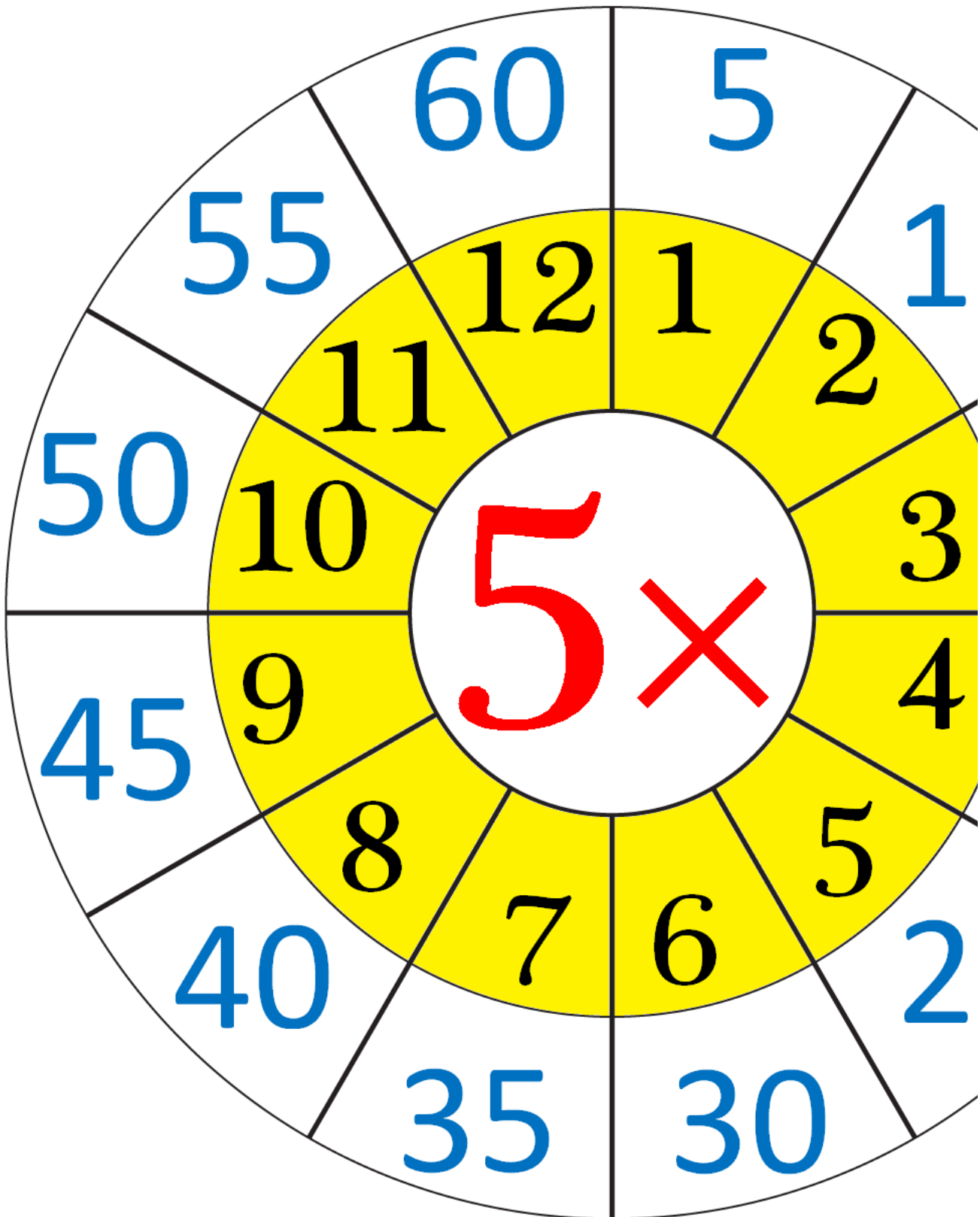
1. $837 + 208 + 363$
2. Rearrange the sum, $837 + 208 + 363 = (837 + 363) + 208$
 $(837 + 363) + 208 = 1,200 + 208$
 $= 1,408$
1. $1962 + 453 + 1538 + 647$
2. Rearrange the sum $1962 + 453 + 1538 + 647$ as $(1962 + 1538) + (453 + 647)$
 $(1962 + 1538) + (453 + 647) = 3,500 + 1,100$
 $= 4,600$

Q-2 Find the product by suitable arrangement

1. $2 \times 1768 \times 50$
2. $4 \times 166 \times 25$
3. $8 \times 291 \times 125$
4. $625 \times 279 \times 16$
5. $285 \times 5 \times 60$
6. $125 \times 40 \times 8 \times 25$

Solution:

The idea is to pair the numbers so that a number ending in 5 is multiplied with an even number. This would produce 0 in the least significant. For example when asked to calculate $15 \times 7 \times 12$. First do $15 \times 12 = 180$ (notice how the total has 0 in right-most digit) . Now it is easy to do $180 \times 7 = 1260$ (we could ignore the zero, then multiply and then add back the zero) .



1. $2 \times 1768 \times 50$

$$2 \times 1768 \times 50 = (2 \times 50) \times 1768$$

$$= 100 \times 1768$$

$$= 1,76,800$$

1. $4 \times 166 \times 25$

$$4 \times 166 \times 25 = (4 \times 25) \times 166$$

$$= 100 \times 166$$

$$= 16,600$$

Note here we choose to multiply 4 with 25 (even though 166 was also even) , this was because we got 100 makes it very easy to multiply further.

$$1. 8 \times 291 \times 125$$

$$8 \times 291 \times 125 = (8 \times 125) \times 291$$

$$= 1000 \times 291$$

$$= 2,91,000$$

Here 8 is even.

$$1. 625 \times 279 \times 16$$

$$625 \times 279 \times 16 = (625 \times 16) \times 279$$

$$= 10,000 \times 279$$

$$= 2,790,000$$

Here 16 is even.

$$1. 285 \times 5 \times 60$$

$$285 \times 5 \times 60 = 285 \times (5 \times 60)$$

$$= 285 \times 300$$

$$= 85,500$$

Here 60 is the even number.

$$1. 125 \times 40 \times 8 \times 25$$

$$125 \times 40 \times 8 \times 25 = (125 \times 8) \times (40 \times 25)$$

$$= 1000 \times 1000$$

$$= 10,00,000$$

We know that product of 8 and 125 is 1000 and so we make a pair out of them. We also know that 4 multiplied with 25 would be 100 so product of 40 and 25 would also be 1000.

Q-3 Find the value of the following:

$$1. 297 \times 17 + 297 \times 3$$

$$2. 54279 \times 92 + 8 \times 54279$$


$$3. 81265 \times 169 - 81265 \times 69$$

$$4. 3845 \times 5 \times 782 + 769 \times 25 \times 218$$


Solution:

You can distribute multiplication over addition and subtraction:



$$a(b+c) = ab+ac$$


You distribute the **a** to the **b** and, then you distribute the **a** to the **c**.

$$a(b-c) = ab-ac$$


You distribute the **a** to the **b** and, then you distribute the **a** to the **c**.

$$1. 297 \times 17 + 297 \times 3$$

$$= 297 \times (17 + 3)$$

$$= 297 \times 20$$

$$= 5,940$$

$$1. 54279 \times 92 + 8 \times 54279$$

$$= 54279 \times (92 + 8)$$

$$= 54279 \times 100$$

$$= 54,27,900$$

$$1. 81265 \times 169 - 81265 \times 69$$

$$= 81265 \times (169 - 69)$$

$$= 81265 \times 100$$

$$= 81,26,500$$

$$1. 3845 \times 5 \times 782 + 769 \times 25 \times 218$$

$$= (3845 \times 5) \times 782 + (769 \times 25) \times 218$$

$$= (19225) \times 782 + (19225) \times 218$$

$$= 19225 \times (782 + 218)$$

$$= 19225 \times 1000$$

$$= 1,92,25,000$$