

Using Mental Math to Multiply

You can multiply mentally by using compatible numbers or breaking apart numbers.

Find 4×19 using compatible numbers.

Step 1: Substitute a compatible number for 19 that is easy to multiply by 4.

$$\begin{array}{r}
 19 \times 4 \\
 \downarrow \quad \text{Add 1 to make 20.} \\
 20 \times 4
 \end{array}$$

Step 2: Find the new product.

$$20 \times 4 = 80$$

Step 3: Now adjust. Subtract 1 group of 4.

$$80 - 4 = 76.$$

$$4 \times 19 = 76$$

Find 2×76 by breaking apart numbers.

Step 1: Use place value to break apart 76 into 70 and 6.

$$2 \times 76$$

Step 2: Think of 2×76 as

$$2 \times 70 \text{ and } 2 \times 6.$$

$$2 \times 70 + 2 \times 6$$

$$140 + 12$$

Step 3: Add the partial products to get the total.

$$140 + 12 = 152$$

$$2 \times 76 = 152$$

Use mental math to find each product.

1. $5 \times 32 =$ _____

2. $7 \times 53 =$ _____

3. $66 \times 2 =$ _____

4. $92 \times 4 =$ _____

5. $31 \times 8 =$ _____

6. $4 \times 29 =$ _____

7. $18 \times 5 =$ _____

8. $6 \times 49 =$ _____

9. $68 \times 3 =$ _____

10. $4 \times 19 =$ _____

11. $17 \times 5 =$ _____

12. $31 \times 6 =$ _____

13. **Algebra** In $a \times b = 120$, a is a one-digit number and b is a two-digit number. What numbers could a and b represent?
