

Multiplication.

01. Multiplication by 5

S1: Multiply by 10.

S2: Divide by 2.

Eg: ① 68×5

$$\frac{68 \times 10}{2} = \underline{340}$$

② 568×5

$$\frac{568 \times 10}{2} = 2840$$

③ 9846×5

$$\frac{9846 \times 10}{2} = \underline{49230}$$

02. Multiplication by 25

S1: Multiply by 100

S2: Divide by 4.

Eg: ① 9845×25

$$= \frac{9845 \times 100}{4} = \frac{984500}{4} = \underline{246125}$$

② 7643×25

$$= \frac{7643 \times 100}{4} = \frac{764300}{4} = \underline{191075}$$

03. Multiplication by 125

S1: Multiplication by 1000.

S2: Divide by 8.

Eg. ①

$$87 \times 125$$

$$= \frac{87 \times 1000}{8} = \frac{87000}{8} = \underline{10875}$$

② 255×125

$$= \frac{255 \times 1000}{8} = \frac{255000}{8} = \underline{31875}$$

04. Multiplication by 9

Eg. ①

$$56 \times 9$$

$$= 56 \times (10 - 1)$$

$$= 560 - 56 = \underline{504}$$

Eg. ②

$$827 \times 9$$

$$= 827 \times (10 - 1)$$

$$= 8270 - 827 = \underline{7443}$$

05. Multiplication by 99

Eg. ①

$$96 \times 99$$

$$= 96(100 - 1)$$

$$= 9600 - 96$$

$$= 9504$$

② 7286×999

$$= 7286(1000 - 1)$$

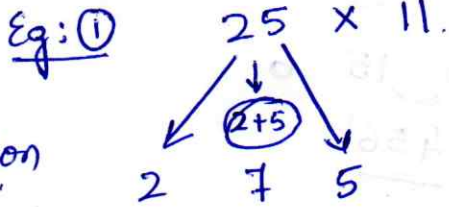
$$= 7286000 - 7286$$

$$= 7278714$$

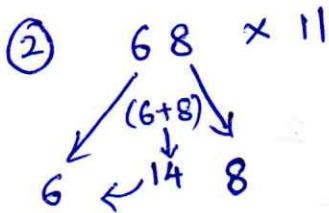
$$\begin{array}{r} -4 \\ -1 \\ \hline 95 \quad 04 \end{array}$$

06. Multiplication by 11

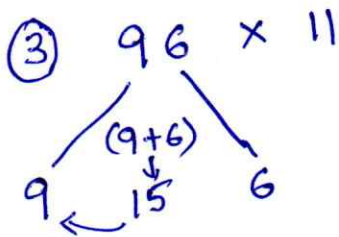
Condition
Two Digit
Multiplication



Ans: 275



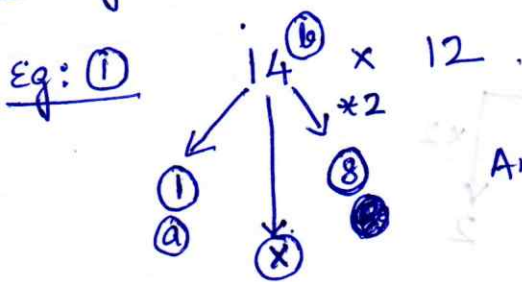
Ans: 748



Ans: 1056

07. Multiplication by 12

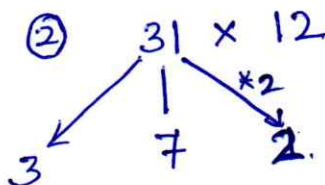
Cond: Two digit numbers



Ans = 168

$$\begin{aligned}
 x &= 2 \times a + b \\
 &= 2 \times 1 + 4 \\
 &= 6
 \end{aligned}$$

2x Ten's place. + unit's place.



Ans = 372

$$\begin{aligned}
 x &= 2 \times 3 + 1 \\
 &= 7
 \end{aligned}$$

③ 38×12

Diagram: 38 is split into 3 and 14. 14 is circled and has an arrow pointing to 16 with a $\times 2$ label. 16 has an arrow pointing to 14. Below, the calculation is shown:

$$x = 2 \times 3 + 8 = 14$$

Diagram: 11 is split into 3 and 15. 15 is circled and has an arrow pointing to 6 with a $\times 2$ label. 6 has an arrow pointing to 15. Below, the calculation is shown:

$$AM = 456$$

④ 96×12

Diagram: 96 is split into 9 and 24. 24 is circled and has an arrow pointing to 12 with a $\times 2$ label. Below, the calculation is shown:

$$x = 2 \times 9 + 6 = 24$$

Diagram: 925 is split into 9, 25, and 2. 25 is circled and has an arrow pointing to 52 with a $\times 2$ label. 52 has an arrow pointing to 25. Below, the calculation is shown:

$$= 1152$$

Cond: 3 digit
x 12.

⑤ 112×12

Diagram: 112 is split into 1, 11, and 2. 11 is circled and has an arrow pointing to 14 with a $\times 2$ label. 14 has an arrow pointing to 11. Below, the calculation is shown:

$$(1 \times 2 + 1) \quad (1 \times 2 + 2) \\ 3 \quad 4$$

Ans: 1344

⑥ 211×12

Diagram: 211 is split into 2, 11, and 1. 11 is circled and has an arrow pointing to 22 with a $\times 2$ label. 22 has an arrow pointing to 11. Below, the calculation is shown:

$$(2 \times 2 + 1) \quad (1 \times 2 + 1) \\ 5 \quad 3$$

Ans: 2532

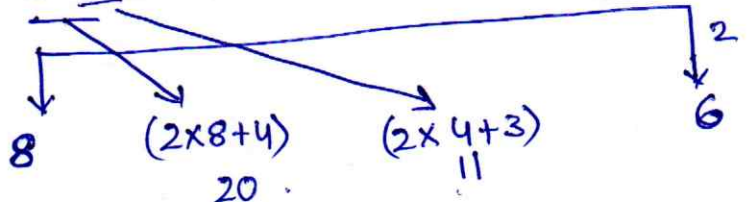
⑦ 286×12

Diagram: 286 is split into 2, 86, and 2. 86 is circled and has an arrow pointing to 172 with a $\times 2$ label. 172 has an arrow pointing to 86. Below, the calculation is shown:

$$(2 \times 2 + 8) \quad (8 \times 2 + 6) \\ 12 \quad 22 \\ 2 \quad 2 \\ 2 \quad 23 \\ 2 \quad 3 \quad 2 \\ = 3432$$

③

843 x 12



8 20 16

10116