

# Grade 11 Essential – UNIT X Prior Studies Manual Multiplication

Name: \_\_\_\_\_

## Multiplication of a 2-Digit Number by a 1-Digit Number with Carrying

### • Example 1

$$3 \times 25 = ?$$

$$\begin{array}{r} \text{Step 1} \quad \overset{1}{2}5 \\ \times 3 \\ \hline 5 \end{array}$$

Multiplying  $3 \times 5$  gives us 15 ones. Write 5 ones and carry 1 ten.

$$\begin{array}{r} \text{Step 2} \quad \overset{1}{2}5 \\ \times 3 \\ \hline 75 \end{array}$$

Now multiply  $3 \times 2$  tens and add the 1 that was carried to get 7, the tens digit of the product.

### • Example 2

Peter earns \$4 for every case of oranges he sells. How much has he earned when he sells 14 cases of oranges?

To find Peter's total earnings, multiply the number of cases (14) by his earnings per case (\$4).

$$14 \times 4 = 56$$

Peter has earned \$56 selling oranges.

Multiply.

1. 
$$\begin{array}{r} 48 \\ \times 4 \\ \hline \end{array}$$

2. 
$$\begin{array}{r} 53 \\ \times 5 \\ \hline \end{array}$$

3. 
$$\begin{array}{r} 58 \\ \times 3 \\ \hline \end{array}$$

4. 
$$\begin{array}{r} 15 \\ \times 7 \\ \hline \end{array}$$

5. 
$$\begin{array}{r} 13 \\ \times 8 \\ \hline \end{array}$$

6. 
$$\begin{array}{r} 59 \\ \times 6 \\ \hline \end{array}$$

Solve the following applications.

7. **Counting.** There are 18 boys in a Cub Scout pack. Each boy brings 6 packs of baseball cards to a meeting. How many packs of baseball cards are there at the meeting?
8. **Payroll deduction.** Kay has \$5 taken from each paycheck as a contribution to United Charities. If she receives 26 paychecks a year, what is her annual contribution?
9. **Number of seats.** A small seminar room contains 12 rows of seats. Each row contains 7 seats. How many seats are in the room?

ANSWERS:

- 1) 192      2) 265      3) 174      4) 105  
5) 104      6) 354      7) 108      8) 130  
9) 84

## Multiplication of a 3-Digit Number by a 2-Digit Number with Carrying

Product means to multiply

### • Example 1

Multiply  $56 \times 673$ .

**Step 1**

$$\begin{array}{r} 673 \\ \times 56 \\ \hline \end{array}$$

Write the product as shown.

**Step 2**

$$\begin{array}{r} 41 \\ 673 \\ \times 56 \\ \hline 4038 \end{array}$$

Multiply  $6 \times 673$  for the first partial product. We must carry to the tens and hundreds columns.

**Step 3**

$$\begin{array}{r} 31 \\ 41 \\ 673 \\ \times 56 \\ \hline 4038 \\ 3365 \end{array}$$

Multiply 5 tens  $\times 673$  for the second partial product. We shift the product one place left to show the multiplication by 5 tens.

**Step 4**

$$\begin{array}{r} 31 \\ 41 \\ 673 \\ \times 56 \\ \hline 4038 \\ 3365 \\ \hline 37,688 \end{array}$$

We now add the partial products for our result.

1.  $\begin{array}{r} 235 \\ \times 49 \\ \hline \end{array}$

2.  $\begin{array}{r} 327 \\ \times 59 \\ \hline \end{array}$

3.  $\begin{array}{r} 587 \\ \times 47 \\ \hline \end{array}$

4. Find the product of 708 and 29.

5. What is the product of 21 and 551?

Solve the following applications.

6. **Sales.** A college purchased 28 computers for a new laboratory at a cost of \$879 per computer. What was the total cost of the order?
7. **Copying.** A ream of paper consists of 500 sheets. If 29 reams of paper were used in a copy machine during 1 week, how many copies were made?
8. **Salary.** Margaret has a job that pays \$356 per week. What will she earn in 1 year? (Use 52 weeks per year.)
9. **Medicine.** A hospital has 46 bottles of aspirin and each bottle contains 275 tablets. How many tablets does the hospital have in all?
10. **Assembly cost.** A company pays its shop workers \$15 for every assembly. How much would be paid to a person who had 104 assemblies?
11. **Cost.** A school purchases 18 television sets for \$369 each. What is the cost of the order?
12. **Time.** How many hours are there in a 365-day year?

**ANSWERS:**

- 1) 11,515   2) 19,293   3) 27,589   4) 20,532  
5) 11,571   6) 24,612   7) 14,500   8) 18,512  
9) 12,650   10) 1,560   11) 6,642   12) 8,760