

# Gr 6 – 7 Master Multiplication | Part 5 Memo

Only Gr 6 – 7 Learners Must Continue.

## Question 1 | $300 \times 200$ and $600 \times 400$ etc.

1. Study: Multiplication by 100 makes a number 100 times bigger.

$$\begin{array}{c} \text{T U} \\ \text{a) } 10 \times 100 = 1\ 000 \end{array}$$

Check: "3 zeros"

$$\begin{array}{c} \text{Th H T U} \\ \text{b) } 100 \times 100 = 10\ 000 \end{array}$$

"3 zeros"

$$\begin{array}{c} \text{H T U} \\ \text{c) } 100 \times 100 = 10\ 000 \end{array}$$

Check: "4 zeros"

$$\begin{array}{c} \text{TTh Th H T U} \\ \text{d) } 100 \times 100 = 10\ 000 \end{array}$$

"4 zeros"

2. Complete:

a)  $200 \times 100 = 20\ 000$

b)  $500 \times 100 = 50\ 000$

c)  $800 \times 100 = 80\ 000$

3. Complete: NB:  $100 \times 100 = 10\ 000$ .

a)  $300 \times 200$

$= 3 \times 2 \times 100 \times 100$

$= 6 \times 10\ 000$

$= 60\ 000$

Check: "4 zeros"

b)  $200 \times 400$

$= 2 \times 4 \times 100 \times 100$

$= 8 \times 10\ 000$

$= 80\ 000$

c)  $200 \times 300 = 60\ 000$

d)  $400 \times 200 = 80\ 000$

e)  $300 \times 300 = 90\ 000$

4. Complete:

a)  $500 \times 300$

$= 5 \times 3 \times 100 \times 100$

$= 15 \times 10\ 000$

$= 150\ 000$

Check: "4 zeros"

b)  $400 \times 600$

$= 4 \times 6 \times 100 \times 100$

$= 24 \times 10\ 000$

$= 240\ 000$

c)  $400 \times 300 = 120\ 000$

d)  $700 \times 400 = 280\ 000$

e)  $900 \times 500 = 450\ 000$



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5. Complete:

a)  $500 \times 400$

$= 5 \times 4 \times 100 \times 100$

$= 20 \times 10\ 000$

$= 200\ 000$

Check: "5 zeros"

b)  $600 \times 500$

$= 6 \times 5 \times 100 \times 100$

$= 30 \times 10\ 000$

$= 300\ 000$

c)  $200 \times 500 = 100\ 000$

d)  $500 \times 800 = 400\ 000$

e)  $400 \times 500 = 200\ 000$

6. Complete:

a)  $340 \times 200$

$= 34 \times 2 \times 10 \times 100$

$= 68 \times 1\ 000$

$= 68\ 000$

b)  $230 \times 300$

$= 23 \times 3 \times 10 \times 100$

$= 69 \times 1\ 000$

$= 69\ 000$

c)  $110 \times 300 = 33\ 000$

d)  $240 \times 200 = 48\ 000$

e)  $430 \times 200 = 86\ 000$

**Question 2** | 3-digit × 3-digit Numbers: Part 1 [“Short” Method]

1. Study:	Part 1:	Part 2:	Part 3:
$422 \times 643$	$\begin{array}{r} 422 \\ \times 643 \\ \hline 1266 \end{array}$ <p><math>\leftarrow 3 \times 422</math></p>	$\begin{array}{r} 422 \\ \times 643 \\ \hline 1266 \\ 16880 \end{array}$ <p><math>\leftarrow 3 \times 422</math> <math>\leftarrow 40 \times 422</math></p>	$\begin{array}{r} 11 \\ 422 \\ \times 643 \\ \hline 1266 \\ 16880 \\ + 253200 \\ \hline 271346 \end{array}$ <p><math>\leftarrow 3 \times 422</math> <math>\leftarrow 40 \times 422</math> <math>\leftarrow 600 \times 422</math></p>

2. Complete using the “short” method.

a) $342$	b) $432$	c) $623$	d) $832$
$\times 232$	$\times 223$	$\times 232$	$\times 323$
$\hline 684$ [2 × 342]	$\hline 1296$ [3 × 432]	$\hline 1246$ [2 × 623]	$\hline 2496$ [3 × 832]
$\hline 10260$ [30 × 342]	$\hline 8640$ [20 × 432]	$\hline 18690$ [30 × 623]	$\hline 16640$ [20 × 832]
$+ 68400$ [200 × 342]	$+ 86400$ [200 × 432]	$+ 124600$ [200 × 623]	$+ 249600$ [300 × 832]
$\hline 79344$	$\hline 96336$	$\hline 144536$	$\hline 268736$



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3. Complete: Do your working out on a separate piece of paper.

a)  $423 \times 211 = 89\ 253$     b)  $223 \times 142 = 31\ 666$     c)  $301 \times 847 = 254\ 947$

4. How many sweets are there in 456 jars with 789 sweets in each jar?

$456 \times 789 = 359\ 784$  sweets

5. Cool drink bottles are packed in containers each holding 11 dozen bottles.

Calculate the number of cool drink bottles that can be packed in 522 of these containers. “Dozen” means 12

$11$  dozen =  $11 \times 12 = 132$

$132 \times 522 = 68\ 904$  cool drink bottles

**Question 3 | 3-digit × 3-digit Numbers: Part 2**

[“Short” Method]

1. Study:

**Part 1:**
**Part 2:**
**Part 3:**

$$526 \times 748$$

$$\begin{array}{r} 526 \\ \times 748 \\ \hline 4208 \leftarrow 8 \times 526 \\ \hline \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 526 \\ \times 748 \\ \hline 4208 \leftarrow 8 \times 526 \\ \hline 21040 \leftarrow 40 \times 526 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 526 \\ \times 748 \\ \hline 4208 \leftarrow 8 \times 526 \\ \hline 21040 \leftarrow 40 \times 526 \\ \hline + 368200 \leftarrow 700 \times 526 \\ \hline 393448 \\ \hline \end{array}$$

2. Complete using the “short” method.

a) 346	b) 423	c) 629	d) 837
$\times 732$	$\times 628$	$\times 543$	$\times 683$
<hr/>	<hr/>	<hr/>	<hr/>
692 [2 × 346]	3384 [8 × 423]	1887 [3 × 629]	2511 [3 × 837]
<hr/>	<hr/>	<hr/>	<hr/>
10380 [30 × 346]	8460 [20 × 423]	25160 [40 × 629]	66960 [80 × 837]
<hr/>	<hr/>	<hr/>	<hr/>
+ 242200 [700 × 346]	+ 253800 [600 × 423]	+ 314500 [500 × 629]	+ 502200 [600 × 837]
<hr/>	<hr/>	<hr/>	<hr/>
253272	265644	341547	571671
<hr/>	<hr/>	<hr/>	<hr/>



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3. Complete: Do your working out on a separate piece of paper.

a)  $423 \times 269 = 113\ 787$     b)  $627 \times 148 = 92\ 769$     c)  $467 \times 849 = 396\ 483$

 4. A school buys 758 Play! Maths Books at a discounted price of R105 each. How much do all the books cost in total?  $R105 \times 758 = R79\ 590$ 

5. In a book of 289 pages there are approximately 18 words to a line and 27 lines to a page. Approximately, how many words

a) are there on a page?  $18 \times 27 = 486$

b) are there in the book?  $486 \times 289 = 140\ 454$



**Question 4** | 4-digit × 1-digit Numbers

1. Complete:

$$\begin{aligned} \text{a) } & 3 \times 2\,000 \\ & = 3 \times 2 \times 1\,000 \\ & = 6 \times 1\,000 \\ & = 6\,000 \end{aligned}$$

$$\begin{aligned} \text{b) } & 2 \times 4\,000 \\ & = 2 \times 4 \times 1\,000 \\ & = 8 \times 1\,000 \\ & = 8\,000 \end{aligned}$$

$$\begin{aligned} \text{c) } & 4 \times 2\,000 = 8\,000 \\ \text{d) } & 2\,000 \times 3 = 6\,000 \\ \text{e) } & 3\,000 \times 3 = 9\,000 \end{aligned}$$

2. Complete:

$$\begin{aligned} \text{a) } & 3 \times 6\,000 \\ & = 3 \times 6 \times 1\,000 \\ & = 18 \times 1\,000 \\ & = 18\,000 \\ & \text{Check: "3 zeros"} \end{aligned}$$

$$\begin{aligned} \text{b) } & 4 \times 7\,000 \\ & = 4 \times 7 \times 1\,000 \\ & = 28 \times 1\,000 \\ & = 28\,000 \end{aligned}$$

$$\begin{aligned} \text{c) } & 5 \times 5\,000 = 25\,000 \\ \text{d) } & 6\,000 \times 7 = 42\,000 \\ \text{e) } & 9\,000 \times 8 = 72\,000 \end{aligned}$$

3. Complete:

$$\begin{aligned} \text{a) } & 4 \times 5\,000 \\ & = 4 \times 5 \times 1\,000 \\ & = 20 \times 1\,000 \\ & = 20\,000 \\ & \text{Check: "4 zeros"} \end{aligned}$$

$$\begin{aligned} \text{b) } & 5 \times 6\,000 \\ & = 5 \times 6 \times 1\,000 \\ & = 30 \times 1\,000 \\ & = 30\,000 \end{aligned}$$

$$\begin{aligned} \text{c) } & 2 \times 5\,000 = 10\,000 \\ \text{d) } & 5 \times 8\,000 = 40\,000 \\ \text{e) } & 4 \times 5\,000 = 20\,000 \end{aligned}$$

4. Complete:

$$\begin{array}{r} \text{Th H T U} \\ \text{a) } 1243 \\ \times \quad 2 \\ \hline 2486 \end{array}$$

$$\begin{array}{r} \text{Th H T U} \\ \text{b) } 2334 \\ \times \quad 2 \\ \hline 4668 \end{array}$$

$$\begin{array}{r} \text{TTh Th H T U} \\ \text{c) } 6232 \\ \times \quad 3 \\ \hline 18696 \end{array}$$

$$\begin{array}{r} \text{TTh Th H T U} \\ \text{d) } 7122 \\ \times \quad 3 \\ \hline 21366 \end{array}$$

$$\begin{array}{r} \text{TTh Th H T U} \\ \text{e) } 9234 \\ \times \quad 2 \\ \hline 18468 \end{array}$$

(2Th + 4H + 8T + 6U)

5. Complete:

$$\begin{array}{r} \text{a) } 1^1 2^1 4^3 \\ \times \quad 4 \\ \hline 4972 \end{array}$$

$$\begin{array}{r} \text{b) } 1^2 3^1 3^4 \\ \times \quad 3 \\ \hline 7002 \end{array}$$

$$\begin{array}{r} \text{c) } 1^6 2^1 3^2 \\ \times \quad 5 \\ \hline 31160 \end{array}$$

$$\begin{array}{r} \text{d) } 1^7 1^1 1^2 2 \\ \times \quad 6 \\ \hline 42732 \end{array}$$

$$\begin{array}{r} \text{e) } 9^1 2^1 3^4 \\ \times \quad 4 \\ \hline 36936 \end{array}$$

6. Complete:

$$\begin{array}{r} \text{a) } 1^3 5^2 4^7 6 \\ \times \quad 7 \\ \hline 22932 \end{array}$$

$$\begin{array}{r} \text{b) } 2^8 3^4 3^6 7 \\ \times \quad 5 \\ \hline 42335 \end{array}$$

$$\begin{array}{r} \text{c) } 3^2 5^4 3^8 \\ \times \quad 6 \\ \hline 15228 \end{array}$$

$$\begin{array}{r} \text{d) } 2^6 3^5 2^7 \\ \times \quad 8 \\ \hline 50616 \end{array}$$

$$\begin{array}{r} \text{e) } 5^9 3^6 6^3 7 \\ \times \quad 9 \\ \hline 86733 \end{array}$$

**Question 5** |  $3000 \times 20$  and  $3000 \times 200$  etc.

1. Study:  $\overset{\text{Th}}{1} \overset{\text{H}}{0} \overset{\text{T}}{0} \overset{\text{U}}{0}$        $\overset{\text{TTh}}{1} \overset{\text{Th}}{0} \overset{\text{H}}{0} \overset{\text{T}}{0} \overset{\text{U}}{0}$        $\overset{\text{Th}}{1} \overset{\text{H}}{0} \overset{\text{T}}{0} \overset{\text{U}}{0}$        $\overset{\text{HTH}}{1} \overset{\text{TTh}}{0} \overset{\text{Th}}{0} \overset{\text{H}}{0} \overset{\text{T}}{0} \overset{\text{U}}{0}$

a)  $1\ 000 \times 10 = 10\ 000$       b)  $1\ 000 \times 100 = 100\ 000$

Check: "4 zeros"      "4 zeros"      Check: "5 zeros"      "5 zeros"

2. Complete:

a)  $2\ 000 \times 10 = 20\ 000$     b)  $5\ 000 \times 10 = 50\ 000$     c)  $8\ 000 \times 10 = 80\ 000$

$2\ 000 \times 100 = 200\ 000$        $5\ 000 \times 100 = 500\ 000$        $8\ 000 \times 100 = 800\ 000$

3. Study:

a)  $3\ 000 \times 20$   
 $= 3 \times 2 \times 1\ 000 \times 10$   
 $= 6 \times 10\ 000$   
 $= 60\ 000$  Check: "4 zeros"

b)  $3\ 000 \times 200$   
 $= 3 \times 2 \times 1\ 000 \times 100$   
 $= 6 \times 100\ 000$   
 $= 600\ 000$  Check: "5 zeros"

4. Complete:

a)  $4\ 000 \times 20 = 80\ 000$     b)  $3\ 000 \times 30 = 90\ 000$     c)  $2\ 000 \times 30 = 60\ 000$

$4\ 000 \times 200 = 800\ 000$        $3\ 000 \times 300 = 900\ 000$        $2\ 000 \times 300 = 600\ 000$

5. Study:

a)  $4\ 000 \times 30$   
 $= 4 \times 3 \times 1\ 000 \times 10$   
 $= 12 \times 10\ 000$   
 $= 120\ 000$  Check: "4 zeros"

b)  $4\ 000 \times 300$   
 $= 4 \times 3 \times 1\ 000 \times 100$   
 $= 12 \times 100\ 000$   
 $= 1\ 200\ 000$  Check: "5 zeros"

6. Complete:

a)  $3\ 000 \times 50 = 150\ 000$     b)  $8\ 000 \times 40 = 320\ 000$     c)  $5\ 000 \times 90 = 450\ 000$

$3\ 000 \times 500 = 1\ 500\ 000$        $8\ 000 \times 400 = 3\ 200\ 000$        $5\ 000 \times 900 = 4\ 500\ 000$



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7. Study:

a)  $4\ 000 \times 50$   
 $= 4 \times 5 \times 1\ 000 \times 10$   
 $= 20 \times 10\ 000$   
 $= 200\ 000$  Check: "5 zeros"

b)  $4\ 000 \times 500$   
 $= 4 \times 5 \times 1\ 000 \times 100$   
 $= 20 \times 100\ 000$   
 $= 2\ 000\ 000$  Check: "6 zeros"

a)  $5\ 000 \times 20 = 100\ 000$     b)  $8\ 000 \times 50 = 400\ 000$     c)  $5\ 000 \times 60 = 300\ 000$

$5\ 000 \times 200 = 2\ 000\ 000$        $8\ 000 \times 500 = 4\ 000\ 000$        $5\ 000 \times 600 = 3\ 000\ 000$

Question 6 | 4-digit  $\times$  2-digit Numbers

["Short" Method]

1. Study:  $4526 \times 43$ 

<p><b>Part 1:</b></p> $\begin{array}{r} 1 \quad 1 \\ 4526 \\ \times 43 \\ \hline 13578 \leftarrow 3 \times 4526 \\ \hline \\ \hline \end{array}$	<p><b>Part 2:</b></p> $\begin{array}{r} 2 \quad 1 \quad 2 \\ 4526 \\ \times 43 \\ \hline 13578 \leftarrow 3 \times 4526 \\ + 181040 \leftarrow 40 \times 4526 \\ \hline 194618 \end{array}$
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2. Complete:

<p>a) <math>2346</math></p> $\begin{array}{r} \times 32 \\ \hline 4692 \quad [2 \times 2346] \\ \hline + 70380 \quad [30 \times 2346] \\ \hline 75072 \end{array}$	<p>b) <math>2432</math></p> $\begin{array}{r} \times 43 \\ \hline 7296 \quad [3 \times 2432] \\ \hline + 97280 \quad [40 \times 2432] \\ \hline 104576 \end{array}$	<p>c) <math>3625</math></p> $\begin{array}{r} \times 64 \\ \hline 14500 \quad [4 \times 3625] \\ \hline + 217500 \quad [60 \times 3625] \\ \hline 232000 \end{array}$	<p>d) <math>6374</math></p> $\begin{array}{r} \times 78 \\ \hline 50992 \quad [8 \times 6374] \\ \hline + 446180 \quad [70 \times 6374] \\ \hline 497172 \end{array}$
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3. Complete: Do your working out on a separate piece of paper.

a)  $1423 \times 21 = 29\ 883$     b)  $4527 \times 43 = 194\ 661$     c)  $7084 \times 96 = 680\ 064$

4. A factory fills 235 boxes with 18 batteries each, every month.

How many batteries does the factory pack altogether:

a) per month?  $235 \times 18 = 4230$  batteries

b) per year?  $4230 \times 12 = 50\ 760$  batteries    1 year = 12 months

c) in 2 years?  $50\ 760 \times 2 = 101\ 520$  batteries

**Question 7 | 4-digit × 3-digit Numbers** [“Short” Method]

<p>1. Study:</p> <p><b>3425 × 647</b></p>	<p><b>Part 1:</b></p> $\begin{array}{r} 213 \\ 3425 \\ \times 647 \\ \hline 23975 \\ \hline \end{array}$ <p>← 7 × 3425</p>	<p><b>Part 2:</b></p> $\begin{array}{r} 112 \\ 3425 \\ \times 647 \\ \hline 23975 \\ \hline 137000 \\ \hline \end{array}$ <p>← 7 × 3425</p> <p>← 40 × 3425</p>	<p><b>Part 3:</b></p> $\begin{array}{r} 213 \\ 3425 \\ \times 647 \\ \hline 23975 \\ \hline 137000 \\ \hline + 2055000 \\ \hline 2215975 \\ \hline \end{array}$ <p>← 7 × 3425</p> <p>← 40 × 3425</p> <p>← 600 × 3425</p>
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2. Complete:

<p>a) 2643</p> $\begin{array}{r} 2643 \\ \times 532 \\ \hline 5286 \\ \hline 79290 \\ \hline + 1321500 \\ \hline 1406076 \\ \hline \end{array}$ <p>[2 × 2643]</p> <p>[30 × 2643]</p> <p>[500 × 2643]</p>	<p>b) 4228</p> $\begin{array}{r} 4228 \\ \times 436 \\ \hline 25368 \\ \hline 126840 \\ \hline + 1691200 \\ \hline 1843408 \\ \hline \end{array}$ <p>[6 × 4228]</p> <p>[30 × 4228]</p> <p>[400 × 4228]</p>	<p>c) 6247</p> $\begin{array}{r} 6247 \\ \times 286 \\ \hline 37482 \\ \hline 499760 \\ \hline + 1249400 \\ \hline 1786642 \\ \hline \end{array}$ <p>[6 × 6247]</p> <p>[80 × 6247]</p> <p>[200 × 6247]</p>	<p>d) 8356</p> $\begin{array}{r} 8356 \\ \times 783 \\ \hline 25068 \\ \hline 668480 \\ \hline + 5849200 \\ \hline 6542748 \\ \hline \end{array}$ <p>[3 × 8356]</p> <p>[80 × 8356]</p> <p>[700 × 8356]</p>
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3. A normal, healthy adult heart beats about 78 beats per minute.

How many times will a heart beat: 1h = 60min, 1d = 24h

a) in one hour? 78 beats/min × 60min = 4680 beats

b) in one day? 4680 beats/h × 24h = 112 320 beats

4. Susan works at a law firm. She earns R469 an hour. Monday to Friday = 5 days

She works for 8 hours each day, from Monday to Friday each week.

How much does she per earn:

a) per day? R469 × 8 hours = R3752

b) per week? R3752 × 5 days = R18 760

c) in 45 work days? R3752 × 45 days = R168 840