

5. [Large Number +,-]

Skill 5.1 Adding large numbers without carry over.

MM4.2 1 2 2 3 3 4 4
MM5.1 1 1 2 2 3 3 4 4

- Always keep your working columns in line, aligning units with units, tens with tens, etc.
- Add from right to left.

Q. $1276 + 4520 =$

A. $1276 + 4520 = 5796$

Units: $6 + 0 = 6 \Rightarrow 6$ units

Tens: $7 + 2 = 9 \Rightarrow 9$ tens

Hundreds: $2 + 5 = 7 \Rightarrow 7$ hundreds

Thousands: $1 + 4 = 5 \Rightarrow 5$ thousands

$$\begin{array}{r} 1\ 2\ 7\ 6 \\ +\ 4\ 5\ 2\ 0 \\ \hline 5\ 7\ 9\ 6 \end{array}$$

thousands
hundreds
tens
units

a) $5420 + 362 =$

$$\begin{array}{r} 5\ 4\ 2\ 0 \\ +\ 3\ 6\ 2 \\ \hline 5\ 7\ 8\ 2 \end{array}$$

b) $1674 + 125 =$

$$\begin{array}{r} 1\ 6\ 7\ 4 \\ +\ 1\ 2\ 5 \\ \hline \end{array}$$

c) $2081 + 406 =$

$$\begin{array}{r} 2\ 0\ 8\ 1 \\ +\ 4\ 0\ 6 \\ \hline \end{array}$$

d) $2316 + 350 =$

$$\begin{array}{r} 2\ 3\ 1\ 6 \\ +\ 3\ 5\ 0 \\ \hline \end{array}$$

e) $1854 + 124 =$

$$\begin{array}{r} 1\ 8\ 5\ 4 \\ +\ 1\ 2\ 4 \\ \hline \end{array}$$

f) $3224 + 360 =$

$$\begin{array}{r} 3\ 2\ 2\ 4 \\ +\ 3\ 6\ 0 \\ \hline \end{array}$$

g) $2246 + 7401 =$

$$\begin{array}{r} 2\ 2\ 4\ 6 \\ +\ 7\ 4\ 0\ 1 \\ \hline \end{array}$$

h) $3517 + 2262 =$

$$\begin{array}{r} 3\ 5\ 1\ 7 \\ +\ 2\ 2\ 6\ 2 \\ \hline \end{array}$$

i) $1843 + 3026 =$

$$\begin{array}{r} 1\ 8\ 4\ 3 \\ +\ 3\ 0\ 2\ 6 \\ \hline \end{array}$$

j) $7024 + 1721 =$

$$\begin{array}{r} 7\ 0\ 2\ 4 \\ +\ 1\ 7\ 2\ 1 \\ \hline \end{array}$$

k) $3251 + 3641 =$

$$\begin{array}{r} 3\ 2\ 5\ 1 \\ +\ 3\ 6\ 4\ 1 \\ \hline \end{array}$$

l) $4835 + 2163 =$

$$\begin{array}{r} 4\ 8\ 3\ 5 \\ +\ 2\ 1\ 6\ 3 \\ \hline \end{array}$$

Skill 5.2 Subtracting large numbers without carry over.

MM4.2 1 1 22 33 44
MM5.1 11 22 33 44

- Always keep your working columns in line, aligning units with units, tens with tens, etc.
- Subtract from right to left.

Q. $2718 - 1403 =$

A. $2718 - 1403 = 1315$

Units: $8 - 3 = 5 \Rightarrow 5$ units

Tens: $1 - 0 = 1 \Rightarrow 1$ ten

Hundreds: $7 - 4 = 3 \Rightarrow 3$ hundreds

Thousands: $2 - 1 = 1 \Rightarrow 1$ thousand

$$\begin{array}{r} 2718 \\ - 1403 \\ \hline 1315 \end{array}$$

thousands
hundreds
tens
units

a) $5899 - 473 =$

5426

$$\begin{array}{r} 5899 \\ - 473 \\ \hline 5426 \end{array}$$

b) $1473 - 302 =$

1171

$$\begin{array}{r} 1473 \\ - 302 \\ \hline 1171 \end{array}$$

c) $1384 - 261 =$

1123

$$\begin{array}{r} 1384 \\ - 261 \\ \hline 1123 \end{array}$$

d) $8641 - 240 =$

8401

$$\begin{array}{r} 8641 \\ - 240 \\ \hline 8401 \end{array}$$

e) $2756 - 304 =$

2452

$$\begin{array}{r} 2756 \\ - 304 \\ \hline 2452 \end{array}$$

f) $8792 - 3420 =$

5372

$$\begin{array}{r} 8792 \\ - 3420 \\ \hline 5372 \end{array}$$

g) $6207 - 3201 =$

3006

$$\begin{array}{r} 6207 \\ - 3201 \\ \hline 3006 \end{array}$$

h) $7493 - 2151 =$

5342

$$\begin{array}{r} 7493 \\ - 2151 \\ \hline 5342 \end{array}$$

i) $9867 - 6456 =$

3411

$$\begin{array}{r} 9867 \\ - 6456 \\ \hline 3411 \end{array}$$

j) $7085 - 4013 =$

3072

$$\begin{array}{r} 7085 \\ - 4013 \\ \hline 3072 \end{array}$$

k) $8782 - 6241 =$

2541

$$\begin{array}{r} 8782 \\ - 6241 \\ \hline 2541 \end{array}$$

l) $5694 - 3564 =$

2130

$$\begin{array}{r} 5694 \\ - 3564 \\ \hline 2130 \end{array}$$

Skill 5.3 Adding two large numbers with carry over.

- Always keep your working columns in line, aligning units with units, tens with tens, etc.
- Add from right to left.

Q. $4627 + 1398 =$ A. $4627 + 1398 = 6025$

$$\begin{array}{r}
 \overset{1}{4} \overset{1}{6} \overset{1}{2} 7 \\
 + 1398 \\
 \hline
 6025 \\
 \hline
 \begin{array}{l}
 \text{thousands} \\
 \text{hundreds} \\
 \text{tens} \\
 \text{units}
 \end{array}
 \end{array}$$

Units: $7 + 8 = 15$
 $15 \text{ units} = 1 \text{ ten and } 5 \text{ units} \Rightarrow 5 \text{ units}$
 Carry the 1 ten to the tens column.

Tens: $2 + 9 + \text{carry } 1 = 12$
 $12 \text{ tens} = 1 \text{ hundred and } 2 \text{ tens} \Rightarrow 2 \text{ tens}$
 Carry the 1 hundred to the next column.

Hundreds: $6 + 3 + \text{carry } 1 = 10$
 $10 \text{ hundreds} = 1 \text{ thousand and } 0 \text{ hundred} \Rightarrow 0 \text{ hundred}$
 Carry the 1 thousand to the next column.

Thousands: $4 + 1 + \text{carry } 1 = 6$
 $\Rightarrow 6 \text{ thousands}$

a) $2873 + 651 =$ **3524**

$$\begin{array}{r}
 \overset{1}{2} \overset{1}{8} 7 3 \\
 + 651 \\
 \hline
 3524 \\
 \hline
 \end{array}$$

b) $7546 + 372 =$

$$\begin{array}{r}
 7546 \\
 + 372 \\
 \hline
 \hline
 \hline
 \end{array}$$

c) $261 + 1384 =$

$$\begin{array}{r}
 261 \\
 + 1384 \\
 \hline
 \hline
 \hline
 \end{array}$$

d) $5783 + 2791 =$

$$\begin{array}{r}
 5783 \\
 + 2791 \\
 \hline
 \hline
 \hline
 \end{array}$$

e) $3367 + 2945 =$

$$\begin{array}{r}
 3367 \\
 + 2945 \\
 \hline
 \hline
 \hline
 \end{array}$$

f) $1592 + 4318 =$

$$\begin{array}{r}
 1592 \\
 + 4318 \\
 \hline
 \hline
 \hline
 \end{array}$$

g) $6256 + 2938 =$

$$\begin{array}{r}
 6256 \\
 + 2938 \\
 \hline
 \hline
 \hline
 \end{array}$$

h) $2098 + 3147 =$

$$\begin{array}{r}
 2098 \\
 + 3147 \\
 \hline
 \hline
 \hline
 \end{array}$$

i) $5437 + 2659 =$

$$\begin{array}{r}
 5437 \\
 + 2659 \\
 \hline
 \hline
 \hline
 \end{array}$$

j) $46723 + 3581 =$

$$\begin{array}{r}
 46723 \\
 + 3581 \\
 \hline
 \hline
 \hline
 \hline
 \hline
 \end{array}$$

k) $31054 + 6294 =$

$$\begin{array}{r}
 31054 \\
 + 6294 \\
 \hline
 \hline
 \hline
 \hline
 \hline
 \end{array}$$

l) $58943 + 2387 =$

$$\begin{array}{r}
 58943 \\
 + 2387 \\
 \hline
 \hline
 \hline
 \hline
 \hline
 \end{array}$$

Skill 5.4 Subtracting large numbers with carry over (1).

MM4.2 1 1 2 2 3 3 4 4
MM5.1 1 1 2 2 3 3 4 4

- Always keep your working columns in line, aligning units with units, tens with tens, etc.
- Subtract from right to left.
- Whenever a number cannot be subtracted from another number to give a positive result then use:

EITHER

Decomposition method - Borrow from a higher place value and give to a lower place value.

Example: $3541 - 194 = 3347$

Units: $1 - 4 = ?$

Borrow 1 ten from the tens column (reduce the 4 tens to 3 tens) and give it as 10 units to the units column to make 11 units.

$$11 - 4 = 7 \text{ units}$$

Tens: $3 - 9 = ?$

Borrow 1 hundred from the hundreds column (reduce the 5 hundreds to 4 hundreds) and give it as 10 tens to the tens column to make 13 tens.

$$13 - 9 = 4 \text{ tens}$$

Hundreds: $4 - 1 = 3 \text{ hundreds}$

Thousands: $3 - 0 = 3 \text{ thousands}$

$$\begin{array}{r} \overset{4}{3} \overset{13}{5} \overset{11}{4} \overset{1}{1} \\ - \quad 1 \quad 9 \quad 4 \\ \hline 3 \quad 3 \quad 4 \quad 7 \end{array}$$

thousands hundreds tens units

OR

Equal addition method - Each time a number is added to the top it must also be added to the bottom but in different columns.

Example: $3541 - 194 = 3347$

Units: $1 - 4 = ?$

Add 10 units to the 1 and add 10 units (1 ten) to the 9 (bottom number in the tens column)

$$11 - 4 = 7 \text{ units}$$

Tens: $4 - (9 + 1) = ?$

Add 10 tens to the 4 and add 10 tens (1 hundred) to the 1 (bottom number in the hundreds column)

$$14 - 10 = 4 \text{ tens}$$

Hundreds: $5 - (1 + 1) = 3 \text{ hundreds}$

Thousands: $3 - 0 = 3 \text{ thousands}$

$$\begin{array}{r} \overset{1}{3} \overset{1}{5} \overset{1}{4} \overset{1}{1} \\ - \quad 1 \quad 9 \quad 4 \\ \hline 3 \quad 3 \quad 4 \quad 7 \end{array}$$

thousands hundreds tens units

Q. $5003 - 2698 =$

A. $5003 - 2698 = 2305$

Decomposition OR Equal addition

$$\begin{array}{r} \overset{4}{5} \overset{10}{0} \overset{10}{0} \overset{13}{3} \\ - \quad 2 \quad 6 \quad 9 \quad 8 \\ \hline 2 \quad 3 \quad 0 \quad 5 \end{array}$$

thousands hundreds tens units

$$\begin{array}{r} \overset{1}{5} \overset{1}{0} \overset{1}{0} \overset{1}{3} \\ - \quad 2 \quad 6 \quad 9 \quad 8 \\ \hline 2 \quad 3 \quad 0 \quad 5 \end{array}$$

thousands hundreds tens units

a) $4788 - 964 =$

3824

b) $5624 - 108 =$

c) $2673 - 491 =$

$$\begin{array}{r} \overset{3}{4} \overset{17}{7} \quad 8 \quad 8 \\ - \quad 9 \quad 6 \quad 4 \\ \hline 3 \quad 8 \quad 2 \quad 4 \end{array}$$

Use decomposition

$$\begin{array}{r} 5 \quad 6 \quad 2 \quad 4 \\ - \quad 1 \quad 0 \quad 8 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \quad 6 \quad 7 \quad 3 \\ - \quad 4 \quad 9 \quad 1 \\ \hline \end{array}$$

d) $6385 - 2095 =$

e) $3117 - 2805 =$

f) $9726 - 3851 =$

$$\begin{array}{r} 6 \quad 3 \quad 8 \quad 5 \\ - \quad 2 \quad 0 \quad 9 \quad 5 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \quad 1 \quad 1 \quad 7 \\ - \quad 2 \quad 8 \quad 0 \quad 5 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \quad 7 \quad 2 \quad 6 \\ - \quad 3 \quad 8 \quad 5 \quad 1 \\ \hline \end{array}$$

Skill 5.4 Subtracting large numbers with carry over (2).

MM4.2 1 1 2 2 3 3 4 4
MM5.1 1 1 2 2 3 3 4 4

g) $6319 - 254 =$

$$\begin{array}{r} 6 \ 3 \ 1 \ 9 \\ - \quad 2 \ 5 \ 4 \\ \hline \\ \hline \end{array}$$

h) $8536 - 914 =$

$$\begin{array}{r} 8 \ 5 \ 3 \ 6 \\ - \quad 9 \ 1 \ 4 \\ \hline \\ \hline \end{array}$$

i) $4467 - 318 =$

$$\begin{array}{r} 4 \ 4 \ 6 \ 7 \\ - \quad 3 \ 1 \ 8 \\ \hline \\ \hline \end{array}$$

j) $9307 - 2453 =$

$$\begin{array}{r} 9 \ 3 \ 0 \ 7 \\ - \quad 2 \ 4 \ 5 \ 3 \\ \hline \\ \hline \end{array}$$

k) $4083 - 1957 =$

$$\begin{array}{r} 4 \ 0 \ 8 \ 3 \\ - \quad 1 \ 9 \ 5 \ 7 \\ \hline \\ \hline \end{array}$$

l) $7062 - 2948 =$

$$\begin{array}{r} 7 \ 0 \ 6 \ 2 \\ - \quad 2 \ 9 \ 4 \ 8 \\ \hline \\ \hline \end{array}$$

m) $4208 - 657 =$

$$\begin{array}{r} 4 \ 2 \ 0 \ 8 \\ - \quad 6 \ 5 \ 7 \\ \hline \\ \hline \end{array}$$

n) $2009 - 121 =$

$$\begin{array}{r} 2 \ 0 \ 0 \ 9 \\ - \quad 1 \ 2 \ 1 \\ \hline \\ \hline \end{array}$$

o) $3564 - 285 =$

$$\begin{array}{r} 3 \ 5 \ 6 \ 4 \\ - \quad 2 \ 8 \ 5 \\ \hline \\ \hline \end{array}$$

p) $8357 - 489 =$

$$\begin{array}{r} 8 \ 3 \ 5 \ 7 \\ - \quad 4 \ 8 \ 9 \\ \hline \\ \hline \end{array}$$

q) $7231 - 645 =$

$$\begin{array}{r} 7 \ 2 \ 3 \ 1 \\ - \quad 6 \ 4 \ 5 \\ \hline \\ \hline \end{array}$$

r) $6534 - 3977 =$

$$\begin{array}{r} 6 \ 5 \ 3 \ 4 \\ - \quad 3 \ 9 \ 7 \ 7 \\ \hline \\ \hline \end{array}$$

s) $45328 - 8634 =$

$$\begin{array}{r} 4 \ 5 \ 3 \ 2 \ 8 \\ - \quad 8 \ 6 \ 3 \ 4 \\ \hline \\ \hline \end{array}$$

t) $31764 - 5936 =$

$$\begin{array}{r} 3 \ 1 \ 7 \ 6 \ 4 \\ - \quad 5 \ 9 \ 3 \ 6 \\ \hline \\ \hline \end{array}$$

u) $72004 - 4527 =$

$$\begin{array}{r} 7 \ 2 \ 0 \ 0 \ 4 \\ - \quad 4 \ 5 \ 2 \ 7 \\ \hline \\ \hline \end{array}$$

v) $63148 - 7980 =$

$$\begin{array}{r} 6 \ 3 \ 1 \ 4 \ 8 \\ - \quad 7 \ 9 \ 8 \ 0 \\ \hline \\ \hline \end{array}$$

w) $52305 - 4615 =$

$$\begin{array}{r} 5 \ 2 \ 3 \ 0 \ 5 \\ - \quad 4 \ 6 \ 1 \ 5 \\ \hline \\ \hline \end{array}$$

x) $28007 - 3495 =$

$$\begin{array}{r} 2 \ 8 \ 0 \ 0 \ 7 \\ - \quad 3 \ 4 \ 9 \ 5 \\ \hline \\ \hline \end{array}$$

Skill 5.5 Adding and/or subtracting multiple large numbers with carry over.

MM4.2 11 22 33 44
MM5.1 11 22 33 44

- Work from left to right.

Q. $563 + 4027 - 945 =$

A. $563 + 4027 - 945 = 3645$

Complete the addition first
 $563 + 4027 = 4590$
 Then subtract 945 from 4590
 $4590 - 945 = 3645$

$$\begin{array}{r}
 \begin{array}{|c|c|c|c|}
 \hline
 5 & 6 & 3 & \\
 \hline
 \end{array} \\
 + \begin{array}{|c|c|c|c|}
 \hline
 4 & 0 & 2 & 7 \\
 \hline
 \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|}
 \hline
 4 & 5 & 9 & 0 \\
 \hline
 \end{array} \\
 \\
 \begin{array}{|c|c|c|c|}
 \hline
 4 & 5 & 9 & 0 \\
 \hline
 \end{array} \\
 - \begin{array}{|c|c|c|c|}
 \hline
 9 & 4 & 5 & \\
 \hline
 \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|}
 \hline
 3 & 6 & 4 & 5 \\
 \hline
 \end{array} \\
 \begin{array}{l}
 \text{thousands} \\
 \text{hundreds} \\
 \text{tens} \\
 \text{units}
 \end{array}
 \end{array}$$

a) $1256 + 3875 + 496 =$

5627

b) $883 + 437 + 170 =$

$$\begin{array}{r}
 \begin{array}{|c|c|c|c|}
 \hline
 1 & 2 & 5 & 6 \\
 \hline
 \end{array} \\
 \begin{array}{|c|c|c|c|}
 \hline
 3 & 8 & 7 & 5 \\
 \hline
 \end{array} \\
 + \begin{array}{|c|c|c|c|}
 \hline
 4 & 9 & 6 & \\
 \hline
 \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|}
 \hline
 5 & 6 & 2 & 7 \\
 \hline
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 \begin{array}{|c|c|c|}
 \hline
 8 & 8 & 3 \\
 \hline
 \end{array} \\
 + \\
 \hline
 \\
 \hline
 \end{array}$$

c) $945 + 34 + 286 + 121 =$

d) $598 + 1763 - 555 =$

$$\begin{array}{r}
 \begin{array}{|c|c|c|}
 \hline
 9 & 4 & 5 \\
 \hline
 \end{array} \\
 + \\
 \hline
 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 \begin{array}{|c|c|c|}
 \hline
 5 & 9 & 8 \\
 \hline
 \end{array} \\
 + \\
 \hline
 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 \begin{array}{|c|c|c|}
 \hline
 5 & 5 & 5 \\
 \hline
 \end{array} \\
 - \\
 \hline
 \\
 \hline
 \end{array}$$

e) $764 + 8359 - 847 =$

f) $1435 + 2957 - 444 =$

$$\begin{array}{r}
 \begin{array}{|c|c|c|}
 \hline
 7 & 6 & 4 \\
 \hline
 \end{array} \\
 + \\
 \hline
 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 - \\
 \hline
 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 + \\
 \hline
 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 - \\
 \hline
 \\
 \hline
 \end{array}$$

g) $4000 + 10000 - 11374 =$

h) $17000 + 2000 - 13857 =$

$$\begin{array}{r}
 \begin{array}{|c|c|c|c|}
 \hline
 4 & 0 & 0 & 0 \\
 \hline
 \end{array} \\
 + \\
 \hline
 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 - \\
 \hline
 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 + \\
 \hline
 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 - \\
 \hline
 \\
 \hline
 \end{array}$$