



Subtraction 2.

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|---|---|---|---|---|
| 1). $\begin{array}{r} 174 \\ \underline{52} \\ \hline \end{array}$ - | 2). $\begin{array}{r} 267 \\ \underline{26} \\ \hline \end{array}$ - | 3). $\begin{array}{r} 439 \\ \underline{14} \\ \hline \end{array}$ - | 4). $\begin{array}{r} 175 \\ \underline{32} \\ \hline \end{array}$ - | 5). $\begin{array}{r} 286 \\ \underline{61} \\ \hline \end{array}$ - |
| 6). $\begin{array}{r} 147 \\ \underline{15} \\ \hline \end{array}$ - | 7). $\begin{array}{r} 285 \\ \underline{55} \\ \hline \end{array}$ - | 8). $\begin{array}{r} 497 \\ \underline{71} \\ \hline \end{array}$ - | 9). $\begin{array}{r} 365 \\ \underline{34} \\ \hline \end{array}$ - | 10). $\begin{array}{r} 489 \\ \underline{67} \\ \hline \end{array}$ - |
| 11). $\begin{array}{r} 536 \\ \underline{31} \\ \hline \end{array}$ - | 12). $\begin{array}{r} 348 \\ \underline{12} \\ \hline \end{array}$ - | 13). $\begin{array}{r} 474 \\ \underline{43} \\ \hline \end{array}$ - | 14). $\begin{array}{r} 579 \\ \underline{53} \\ \hline \end{array}$ - | 15). $\begin{array}{r} 655 \\ \underline{23} \\ \hline \end{array}$ - |
| 16). $\begin{array}{r} 468 \\ \underline{47} \\ \hline \end{array}$ - | 17). $\begin{array}{r} 683 \\ \underline{81} \\ \hline \end{array}$ - | 18). $\begin{array}{r} 757 \\ \underline{24} \\ \hline \end{array}$ - | 19). $\begin{array}{r} 584 \\ \underline{52} \\ \hline \end{array}$ - | 20). $\begin{array}{r} 788 \\ \underline{25} \\ \hline \end{array}$ - |
| 21). $\begin{array}{r} 847 \\ \underline{23} \\ \hline \end{array}$ - | 22). $\begin{array}{r} 797 \\ \underline{45} \\ \hline \end{array}$ - | 23). $\begin{array}{r} 946 \\ \underline{13} \\ \hline \end{array}$ - | 24). $\begin{array}{r} 888 \\ \underline{77} \\ \hline \end{array}$ - | 25). $\begin{array}{r} 983 \\ \underline{53} \\ \hline \end{array}$ - |
| 26). $\begin{array}{r} 153 \\ \underline{24} \\ \hline \end{array}$ - | 27). $\begin{array}{r} 263 \\ \underline{37} \\ \hline \end{array}$ - | 28). $\begin{array}{r} 350 \\ \underline{17} \\ \hline \end{array}$ - | 29). $\begin{array}{r} 181 \\ \underline{26} \\ \hline \end{array}$ - | 30). $\begin{array}{r} 482 \\ \underline{67} \\ \hline \end{array}$ - |
| 31). $\begin{array}{r} 364 \\ \underline{57} \\ \hline \end{array}$ - | 32). $\begin{array}{r} 773 \\ \underline{39} \\ \hline \end{array}$ - | 33). $\begin{array}{r} 954 \\ \underline{18} \\ \hline \end{array}$ - | 34). $\begin{array}{r} 653 \\ \underline{48} \\ \hline \end{array}$ - | 35). $\begin{array}{r} 973 \\ \underline{46} \\ \hline \end{array}$ - |



Copy and complete.

- 1). $\begin{array}{r} 4\square5 \\ \underline{31} \\ 44\square \end{array}$ -
- 2). $\begin{array}{r} 236 \\ \underline{\square2} \\ 22\square \end{array}$ -
- 3). $\begin{array}{r} 17\square \\ \underline{25} \\ 1\square2 \end{array}$ -
- 4). $\begin{array}{r} 4\square4 \\ \underline{23} \\ 44\square \end{array}$ -
- 5). $\begin{array}{r} 368 \\ \underline{3\square} \\ 3\square7 \end{array}$ -
- 6). $\begin{array}{r} 29\square \\ \underline{\square4} \\ 270 \end{array}$ -
- 7). $\begin{array}{r} 3\square6 \\ \underline{3\square} \\ 323 \end{array}$ -
- 8). $\begin{array}{r} 475 \\ \underline{\square\square} \\ 434 \end{array}$ -
- 9). $\begin{array}{r} 289 \\ \underline{\square\square} \\ 258 \end{array}$ -
- 10). $\begin{array}{r} 5\square\square \\ \underline{24} \\ 540 \end{array}$ -
- 11). $\begin{array}{r} 37\square \\ \underline{\square2} \\ 333 \end{array}$ -
- 12). $\begin{array}{r} 58\square \\ \underline{12} \\ 5\square4 \end{array}$ -
- 13). $\begin{array}{r} 484 \\ \underline{\square\square} \\ 433 \end{array}$ -
- 14). $\begin{array}{r} 6\square8 \\ \underline{3\square} \\ 644 \end{array}$ -
- 15). $\begin{array}{r} 276 \\ \underline{2\square} \\ 2\square5 \end{array}$ -
- 16). $\begin{array}{r} 54\square \\ \underline{32} \\ 5\square5 \end{array}$ -
- 17). $\begin{array}{r} 2\square7 \\ \underline{5\square} \\ 205 \end{array}$ -
- 18). $\begin{array}{r} 7\square\square \\ \underline{26} \\ 751 \end{array}$ -
- 19). $\begin{array}{r} 64\square \\ \underline{\square2} \\ 616 \end{array}$ -
- 20). $\begin{array}{r} 845 \\ \underline{\square\square} \\ 831 \end{array}$ -
- 21). $\begin{array}{r} 7\square8 \\ \underline{2\square} \\ 743 \end{array}$ -
- 22). $\begin{array}{r} 95\square \\ \underline{\square4} \\ 921 \end{array}$ -
- 23). $\begin{array}{r} 8\square7 \\ \underline{15} \\ 82\square \end{array}$ -
- 24). $\begin{array}{r} 78\square \\ \underline{\square4} \\ 750 \end{array}$ -
- 25). $\begin{array}{r} 9\square7 \\ \underline{4\square} \\ 906 \end{array}$ -
- 26). $\begin{array}{r} 254 \\ \underline{\square5} \\ 22\square \end{array}$ -
- 27). $\begin{array}{r} 172 \\ \underline{\square7} \\ 13\square \end{array}$ -
- 28). $\begin{array}{r} 375 \\ \underline{\square9} \\ 35\square \end{array}$ -
- 29). $\begin{array}{r} 230 \\ \underline{1\square} \\ 2\square3 \end{array}$ -
- 30). $\begin{array}{r} 18\square \\ \underline{58} \\ 1\square4 \end{array}$ -
- 31). $\begin{array}{r} 3\square\square \\ \underline{29} \\ 338 \end{array}$ -
- 32). $\begin{array}{r} 45\square \\ \underline{18} \\ 4\square6 \end{array}$ -
- 33). $\begin{array}{r} 395 \\ \underline{4\square} \\ 3\square9 \end{array}$ -
- 34). $\begin{array}{r} 67\square \\ \underline{\square7} \\ 616 \end{array}$ -
- 35). $\begin{array}{r} 5\square\square \\ \underline{29} \\ 507 \end{array}$ -



Whole Numbers

More Strategies + and - 7

A Adjusting

1 Adjust by one. Try to do some in your head.

a) $428 + 69 = 428 + 70 - 1 = \dots$

b) $385 + 41 = \dots = \dots$

c) $402 - 29 = 402 - 30 + 1 = \dots$

d) $633 - 51 = \dots = \dots$

e) $434 + 81 = \dots = \dots$

f) $525 - 59 = \dots = \dots$

2 Adjust these. Do some mentally.

a) $562 + 194 = 562 + 200 - 6 = \dots$

b) $247 + 308 = \dots = \dots$

c) $482 - 297 = 482 - 300 + \dots = \dots$

d) $636 - 503 = \dots = \dots$

e) $4280 - 2999 = \dots = \dots$

f) $2417 - 398 = \dots = \dots$

3 Adding two almost equal numbers can be done by doubling and adjusting.

a) $39 + 46 = (2 \times 40) - 1 + 6 = \dots$

b) $83 + 78 = (\dots) = \dots$

c) $67 + 74 = \dots = \dots$

d) $254 + 249 = \dots = \dots$

e) $445 + 453 = \dots = \dots$

f) $699 + 697 = \dots = \dots$

4 When subtracting we may change both numbers the same way. The aim is to get one tidy number.

a) $438 - 43 = 435 - 40 = \dots$

b) $297 - 28 = 300 - \dots = \dots$

c) $516 - 61 = \dots = \dots$

d) $495 - 76 = \dots = \dots$

e) $618 - 97 = \dots = \dots$

B Decomposition

With the decomposition strategy for subtraction, you break up the numbers into suitable parts.

Examples: Calculate a) $184 - 56$ b) $412 - 271$

Working:

a) $184 - 56 = (170 + 14) - (50 + 6)$
 $= 128$

b) $410 - 270 = (300 + 110) - (200 + 70)$
 $= 140$

fill in this part first

we need 14 here

1 Show how you use the decomposition method.

a) $65 - 28 = (\dots) - (\dots 20 + 8 \dots)$
 $= \dots$

b) $92 - 36 = (\dots) - (\dots)$
 $= \dots$

c) $153 - 85 = (\dots) - (\dots)$
 $= \dots$

d) $316 - 77 = (\dots) - (\dots)$
 $= \dots$

e) $435 - 69 = (\dots) - (\dots)$
 $= \dots$



2 Try these.

a) $420 - 160 = (\dots) - (\dots 100 + 60 \dots)$
 $= \dots$

b) $670 - 280 = (\dots) - (\dots)$
 $= \dots$

c) $810 - 370 = (\dots) - (\dots)$
 $= \dots$

d) $620 - 240 = (\dots) - (\dots)$
 $= \dots$

10 Subtracting - Decomposition

A The Long and the Short of It

Subtracting large numbers can be done by taking ones away from ones, tens away from tens and so on. Problems arise when we want to take away more than we have. In these cases we can change one thousand into ten hundreds, or one hundred into ten tens, etc. There is a short-hand notation for this. Study the examples.

Example : Calculate using decomposition $9316 - 2432$.

Long Notation : Expand each number

$$\begin{aligned} 9316 &= 9000 + 300 + 10 + 6 \\ - 2432 &= 2000 + 400 + 30 + 2 \end{aligned}$$

$$\begin{array}{r} 200 \quad 110 \\ 9316 = 9000 + \cancel{300} + \cancel{10} + 6 \\ - 2432 = 2000 + 400 + 30 + 2 \end{array}$$

$$\begin{array}{r} 8000 \quad 1200 \quad 110 \\ 9316 = \cancel{9000} + \cancel{300} + \cancel{10} + 6 \\ - 2432 = 2000 + 400 + 30 + 2 \end{array}$$

$$\begin{array}{r} 6884 \leftarrow 6000 + 800 + 80 + 4 \end{array}$$

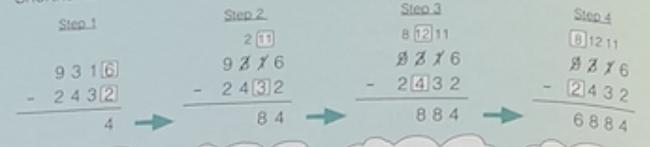
There are not enough tens also not enough hundreds

take one hundred to make extra tens

take one thousand to make extra hundreds

now subtract and form the answer

Shorthand Notation : Leave some space between the digits.



subtract the ones

adjust the tens and subtract

adjust the hundreds and subtract

subtract the thousands

1 Show how you subtract using decomposition in the long notation.

a) $4256 - 2338$

b) $6312 - 1746$

$4256 = \dots\dots\dots$

$6312 = \dots\dots\dots$

$-2338 = \dots\dots\dots$

$-1746 = \dots\dots\dots$

2 Subtract these using the short notation.

a)
$$\begin{array}{r} 4486 \\ - 1569 \\ \hline \end{array}$$

b)
$$\begin{array}{r} 2645 \\ - 1872 \\ \hline \end{array}$$

c)
$$\begin{array}{r} 41932 \\ - 8647 \\ \hline \end{array}$$

d)
$$\begin{array}{r} 30217 \\ - 13408 \\ \hline \end{array}$$

3 The questions in this exercise may be worked out mentally or with pen and paper. Do not use a calculator. Show your strategy.

working space

a) Girls' College has 1545 girls, Boys' College has 1484 boys. How many more girls than boys are there in these colleges?

Answer :

b) Work out the difference between the largest 5-digit number and the smallest 5-digit number that can be made using the digits shown. A 5-digit number cannot start with 0!

