



The Four Operations

Learning Skills

Introduction:

It is important to be able to use the four operations (addition, subtraction, multiplication or division) proficiently. As part of your nursing calculations you will need to carry out one or more of these operations. This worksheet provides a revision of these four maths operations.

This sheet will teach you to:

- Add and subtract whole numbers that have 2 or more digits
- Multiply together two whole numbers that have 2 or more digits
- Use a long division method to divide whole numbers

1. Adding and Subtracting whole numbers

Rule: add and subtract by matching place positions

Examples:

a) $1025 + 798 + 52$

$$\begin{array}{r} 1025 + \\ 798 \\ \hline 1512 \\ 1875 \end{array}$$

b) $253 - 171$

$$\begin{array}{r} 1 \\ 253 - \\ 171 \\ \hline 82 \end{array}$$

Notes

$3 - 1 = 2$
 $5 - 7$ can't be done so trade 1 from the next place
 $15 - 7 = 8$
 we have traded 1 from the 2, so that leaves $1 - 1 = 0$

c) $632 - 89$

$$\begin{array}{r} 5 \quad 12 \\ 632 - \\ 89 \\ \hline 543 \end{array}$$

Notes

$2 - 9$ can't be done, so trade 1 from the 3 next place along
 $12 - 9 = 3$
 we have lost 1 from the 3, so now have $2 - 8$
 this can't be done so trade 1 from the 6 next place along:
 $12 - 8 = 4$
 $5 - 0 = 5$

2. A Multiplication table to refer to

You must know your times tables. The following table may be useful.

×	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144
15	15	30	45	60	75	90	105	120	135	150	165	180
20	20	40	60	80	100	120	140	160	180	200	220	240
25	25	50	75	100	125	150	175	200	225	250	275	300
60	60	120	180	240	300	360	420	480	540	600	660	720

3. Multiplying whole numbers

a) 23×46

$$\begin{array}{r}
 \overset{1}{2} \overset{1}{3} \times \\
 46 \\
 \hline
 138 \\
 920 \quad \leftarrow \text{add a 0} \\
 \hline
 1058
 \end{array}$$

Notes

$6 \times 3 = 18$, write down the 8 and carry the 1

$$\begin{array}{r}
 6 \times 2 = 12 \quad + 1 = 13 \\
 = 138
 \end{array}$$

next line: add the 0 to keep the places lined up

$4 \times 3 = 12$, write down 2 and carry the 1

$$\begin{array}{r}
 4 \times 2 = 8 \quad + 1 = 9 \\
 = 920
 \end{array}$$

now add 138 and 920

b) 169×56

$$\begin{array}{r}
 {}^4 1 \quad {}^5 6 \quad 9 \times \\
 \quad \quad 5 \quad 6 \\
 \hline
 1 \quad 0 \quad 1 \quad 4 \\
 8 \quad 4 \quad 5 \quad 0 \\
 \hline
 9 \quad 4 \quad 6 \quad 4
 \end{array}$$

← add a 0

Note

If one number has more digits than the other put the bigger of the two numbers on top.

4. Multiplying numbers ending in 0

A short cut can be taken when one or both numbers end in 0, because anything $\times 0 = 0$

Rule: multiply the non zero numbers together then add on to the answer the total number of 0's

Examples:

a) $6 \times 20 = 6 \times 2(0) = 120$

b) $800 \times 4 = 8 \times 4(00) = 3200 = 3\ 200$

c) $50 \times 100 = 5 \times 1(000) = 5000 = 5\ 000$

d) $600 \times 2000 = 6 \times 2(00000) = 1200000 = 1\ 200\ 000$

5. Dividing whole numbers

To work out a division the sum must be set up in long division format with the divisor (the number you are dividing by) **on the outside**.

Examples

a) $2516 \div 4$

$$\begin{array}{r} 0\ 6\ 2\ 9 \\ 4 \overline{) 2\ 5\ 1\ 6} \\ \underline{8} \\ 17 \\ \underline{16} \\ 10 \\ \underline{8} \\ 20 \\ \underline{20} \\ 0 \end{array} = 629$$

notes

1. how many 4's in 2: 0 (**write on top**) with 2 left over
2. the 2 joins with the 5 to make the number to be divided into 25. (You can also say how many 4's in 2, won't go so how many 4's in 25.)
3. how many 4's in 25: 6 (write on top) with 1 left over
4. the 1 joins with the other 1 to make the number to be divided into 11
5. how many 4's in 11: 2 (write on top) with 3 left over
6. the 3 joins up with the 6 to make the number to be divided into 36
7. how many 4's in 36: 9 (**write on top**) with none left over – that's the last digit so the division is finished.

Make sure each digit in the number being divided into has a digit in the answer sitting on top – this ensures you haven't missed any numbers and keeps things lined up.

b) $2135 \div 35$

$$\begin{array}{r} 0\ 0\ 6\ 1 \\ 35 \overline{) 2\ 1\ 3\ 5} \\ \underline{70} \\ 43 \\ \underline{420} \\ 15 \\ \underline{140} \\ 15 \end{array} = 61$$

Notes

1. When dividing by a number that you don't know the tables for, work out the first few multiples first:
 $35 \times 1 = 35$
 $35 \times 2 = 70$
 $35 \times 3 = 105$
 $35 \times 4 = 140$
 $35 \times 5 = 175$
 $35 \times 6 = 210$
 It is easy to add on 35 each time
2. 35 won't go into 2 and won't go into 21 so the numbers carry across to become 35 into 213.

c) $352 \div 5$

$$\begin{array}{r} 0\ 7\ 0\ .\ 4 \\ 5 \overline{) 3\ 5\ 2\ .\ 0} \\ \underline{15} \\ 20 \\ \underline{20} \\ 0 \end{array} = 70.4$$

Notes

1. how many 5's in 3: 0 (**on top**) with 3 left over
2. how many 5's in 35: 7 (on top) with 0 left over
3. how many 5's in 2: 0 (on top) with 2 left over
4. when there is a remainder like this, then add a decimal point after the last digit, add one or more 0's after the decimal point and keep dividing until there is nothing left over or until you decide to round off the answer.

d) $657 \div 10$

$$\begin{array}{r} 0\ 6\ 5\ .\ 7 \\ 10 \overline{) 6\ 5\ 7\ .\ 0} \\ \underline{60} \\ 57 \\ \underline{50} \\ 70 \\ \underline{70} \\ 0 \end{array} = 65.7$$

6. Some exercises to try

1) $36 + 156 + 49$

3) $2568 - 149$

5) 42×37

7) 63×43

9) 203×72

11) 613×1000

13) 11×300

15) $2 \overline{)156}$

17) $24 \div 9$

19) $372 \div 6$

21) $1743 \div 7$

23) $2811 \div 10$

25) $8136 \div 60$

2) $47 + 158 + 6 + 213$

4) $6284 - 3819$

6) 88×25

8) 156×24

10) 70×40

12) 120×200

14) 8000×40

16) $5 \overline{)1065}$

18) $448 \div 8$

20) $836 \div 4$

22) $2385 \div 15$

24) $625 \div 4$

26) $672 \div 25$

7. Answers

- 1) 241 2) 424 3) 2 419 4) 2 465 5) 1 554 6) 2200
7) 2709 8) 3 744 9) 14 616 10) 2800 11) 613000 12) 24 000
13) 3300 14) 320 000 15) 78 16) 213 17) 36 18) 56
19) 62 20) 209 21) 249 22) 159 23) 281.1 24) 156.25
25) 135.6 26) 26.88

8. For more information

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Other useful websites are available at:

<http://www.coolmath.com>

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