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Maths Practice Kit

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Multiplication Table

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To use the table above:

1. Find the numbers you want to multiply - one number across and one number down.
2. The spot that they intersect is the answer to the multiplication.

Example:

- If you wanted to multiply 4 and 9, find the 4 going across the top of the grid and the 9 going down the left hand side of the grid.
- Follow the column down from the 4 and the row across from the 9. Where they cross is where you find the answer. This is done for you in blue above i.e. 4 x 9 = 36.

Multiplying by 10, 100 or 1,000

Please review the following online resources for further practice click here

When multiplying by 10, 100 or 1,000, the easiest way to calculate is to move the decimal point 1, 2 or 3 spaces to the right.

Example 1:

- 0.36 x 10
- Move the decimal point 1 space to the right
- The answer is 3.6

Example 2:

- 0.36 x 100
- Move the decimal point 2 spaces to the right
- The answer is 36

Example 3:

- 0.36 x 1,000
- Move the decimal point 3 spaces to the right
- The answer is 360

You can add a zero if there is no number as in the example 0.36 x 1,000.

Multiply the following:

Multiplication	Your Answer
0.68 x 10	
0.68 x 100	
0.68 x ,1000	
0.0147 x 10	
0.0147 x 100	
0.0147 x 1,000	
0.0505 x 10	
0.0505 x 100	
0.0505 x 1,000	

Dividing by 10, 100 or 1,000

Please review the following online resources for further practice click here

When dividing by 10, 100 or 1,000, the easiest way to calculate is to move the decimal point 1, 2 or 3 spaces to the left. You can use zeros to make up places when you need to. For numbers less than one, write a zero before the decimal point.

Example 1:

- 0.36 / 10
- Move the decimal point 1 space to the left
- The answer is 0.036

Example 2:

- 0.36 / 100
- Move the decimal point 2 spaces to the left
- The answer is 0.0036

Example 3:

- 0.36 / 1,000
- Move the decimal point 3 spaces to the left
- The answer is 0.00036

Divide the following:

Division	Your Answer
98.4 / 10	
98.4 / 100	
98.4 / 1,000	
301 / 10	
301 / 100	
301 / 1,000	
3 / 10	
3 / 100	
3 / 1,000	

Multiplication of Decimals

Please review the following online resources for further practice click here

Multiplying decimals is as easy as counting the number of decimal places in the question, then multiplying the "whole" numbers together, and then moving the decimal point to the left the number of places counted before you started.

Example 1:

- 8 x 4
- There are no decimal places in the question
- The answer is 32

Example 2:

- 0.8 x 4
- There is one decimal place in the question, so 4 x 8 = 32
- Move the decimal point 1 place to the left
- The answer is 3.2

Example 3:

- 0.8 x 0.4
- There are two decimal places in the question, so 4 x 8 = 32
- Move the decimal point 2 place to the left to get 0.32 (note the zero added before the decimal point)
- The answer is 0.32

Multiply the following:

Multiplication od Decimals	Your Answer
9 x 5	
0.9 x 5	
0.9 x 0.5	
6 x 6	
0.6 x 0.6	
0.06 x 0.06	
0.6 x 0.006	
64 x 12	
6.4 x 0.12	
0.064 x 0.12	

Factors

Please review the following online resources for further practice click here

Many calculations involve the simplifying or cancelling down of fractions. This is what factors are all about. When a number is divided by one of its factors the answer is a whole number i.e. it has no remainder.

Example:

- Determine which of the numbers 2, 3, 5, 7, 11 are factor of 154
- 2 / 154 = 77
- 3 / 154 = 51.34
- 5 / 154 = 30.8
- 7 / 154 = 22
- 11 / 154 = 14
- The answer is that 2, 7 and 11 are whole numbers

Circle the numbers in column B that are factors of column A:

Column A	Column B
20	2, 3, 4, 5, 7, 8
75	3, 5, 7, 11, 15, 25
210	4, 6, 9, 12, 14, 15
100	3, 5, 8, 20, 25, 40
144	4, 8, 12, 16, 18, 24
108	4, 7, 9, 12, 16, 18
165	3, 5, 7, 9, 11, 15
180	4, 8, 12, 15, 16, 25
96	3, 8, 12, 14, 16, 24

Show how you work this out on the next page……

Working Out Page…

Simplifying Fractions

Please review the following online resources for further practice click here

To simplify or cancel down a fraction we need to divide the numerator (the top number of the fraction) **and** the denominator (the bottom number of the fraction) by the **same** number. The answers for both the numerator and the denominator must be whole numbers (numbers without a remainder). It might take a couple of steps to get to the final answer.

Example:

- Simplify 36/48
- 36/48 = 18/24 when the numerator and denominator are divided by 2
- 18/24 = 9/12 when the numerator and denominator are divided by 2
- 9/12 = 3/4 when the numerator and denominator are divided by 3
- The answer is 3/4

Simplify or cancel down the following:

Fractions	Your Answer
8/12	
10/14	
12/28	
22/33	
42/48	
125/250	
60/375	
425/600	
32/72	

Multiplication of Fractions

Please review the following online resources for further practice click here

To multiply fractions you multiply the numerators together and the denominators together, then simplify or cancel down the answer. You can also cancel out prior to doing the calculation so long as the numbers you cancel out are from the denominator in one fraction and the numerator in the other.

Example 1:

- 2/5 x 4/7
- 2 x 4 = 8 (multiplying the numerators)
- 5 x 7 = 35 (multiply the denominators)
- 8/35 cannot be simplified
- The answer is 8/35

Example 2:

- 5/8 x 7/10
- The numerator 5 cancels out the denominator 10, so the numerator 5 becomes 1 because 5 goes in to 5 once and the denominator 10 becomes 2 because 5 goes into 10 twice

So our calculation is now:

- 1/8 x 7/2 (note that the 5 is now 1 and the 10 is now 2)
- 1 x 7 = 7 (multiplying the numerators)
- 8 x 2 = 16 (multiply the denominators)
- 7/16 cannot be simplified or cancelled down

Or without the cancelling out:

- 5 x 7 = 35 (multiplying the numerators)
- 8 x 10 = 80 (multiply the denominators)
- 35/80 can be simplified or cancelled down
- 35/80 = 7/16 by dividing the numerator and the denominator by 5
- The answer is 7/16

Multiply the following and then simplify if needed:

Multiplication of Fractions	Your Answer
1/2 x 2/5	
1/3 x 5/8	
2/7 x 11/12	
1/12 x 1/30	
11/12 x 33/40	
4/9 x 5/12	
3/8 x 12/5	
1/7 x 7/18	
7/8 x 8/7	

Adding and Subtracting of Fractions

Please review the following online resources for further practice click here

To add or subtract fractions both fractions must have the same denominators. For example, you can't simply add 1/5 to 1/7, both must have the same number on the denominator. To do this, we need to create equivalent fractions.

Once the denominators are the same, you then add (or subtract) the numerators. Then simplify if possible.

Example 1:

- 1/3 + 2/5
- Find the nearest number which has both denominators as factors
- 3 and 5 (the denominators) will both go into 15
- To change 1/3 you need to multiply both top and bottom by 5, which gives you 5/15
- To change 2/5 you need to multiply both top and bottom by 3, which gives you 6/16
- Add the to numerators 5 + 6 and put the answer over the new denominator 15
- The answer is 11/15 which cannot be simplified

Example 2:

- 2/7 – 1/14
- Find the nearest number which has both denominators as factors
- 7 and 14 (the denominators) both go into 14, so you only have to make a change to one fraction
- To change 2/7 you need to multiply both top and bottom by 2, which gives you 4/14
- Subtract the numerators (4 – 1) and put the answer over the new denominator 14
- The answer is 3/14 which cannot be simplified

Calculate the following and then simplify if needed:

Adding/Subtracting Fractions	Your Answer
1/2 + 1/4	
1/3 + 2/5	
2/7 – 1/6	
1/10 + 2/5	
2/3 – 1/9	

Rounding Measurements

Please review the following online resources for further practice click here

It may be necessary to "round" when we have numbers that have decimal points e.g. 4.5672. Decimal places are the amount of numbers after the decimal point. When talking about rounding we use the term round to a specific number of decimal places. We may round to 1 decimal place, 2 decimal places, 3 decimal places and more.

When we round to a decimal place we are talking about the amount of numbers that come after the decimal point i.e. 1 decimal place for 1 number, 2 decimal places for 2 numbers and so on.

When we round numbers we round the number down if the number we are removing is between 1 and 4. We round the number up if the number we are removing is between 5 and 9.

Round to One Decimal Place

If the second decimal place is 5 or more, then add one to the first decimal place. If the second decimal place is less than 5 then leave the first decimal place as it is.

Example:

- Round 0.62 to 1 decimal place
- The second decimal is less than 5 so leave the first decimal place as is
- The answer is 0.6

Round to Two Decimal Places

If the third decimal place is 5 or more, then add one to the second decimal place. If the third decimal place is less than 5 then leave the second decimal place as it is.

Example:

- Round 2.145 to 2 decimal places
- The third decimal is 5 or more so add one to the second decimal place
- The answer is 2.15

Round to Three Decimal Places

If the fourth decimal place is 5 or more, then add one to the third decimal place. If the fourth decimal place is less than 5 then leave the third decimal place as it is.

Example:

- Round 0.9705 to 3 decimal places
- The fourth decimal is 5 or more so add one to the third decimal place
- The answer is 0.971

Round the following:

Figure	Round To	Your Answer
0.93	1 decimal place	
0.47	1 decimal place	
1.57	1 decimal place	
2.98	1 decimal places	
0.636	2 decimal places	
2.428	2 decimal places	
0.777	2 decimal places	
0.125	2 decimal places	
1.1196	3 decimal places	
0.8155	3 decimal places	
0.0606	3 decimal places	
1.7575	3 decimal places	

Converting Percentages to Decimals

Please review the following online resources for further practice click here

The term percentage means "per 100", so 50% means 50 per 100 or simply 50/100. If you divide 50 by 100 you get 0.5 (a decimal number). So to convert from percentage to a decimal you divide by 100 and remove the % sign. The easiest way to divide by 100 is to move the decimal point two (2) places to the left.

Example:

- Convert 8.5% to a decimal
- Move the decimal point two places i.e. from 8.5 to 0.85 to 0.085
- The answer is 0.085

Convert the following percentages to decimals (to 2 decimal places):

Percentages	Your Answer
70%	
42%	
98%	
75%	
14%	
20%	
9.5%	
0.5%	

Converting Fractions to Decimals

Please review the following online resources for further practice click here

To convert a fraction to a decimal we divide the denominator into the numerator.

Example:

- Convert 3/4 to a decimal

  4 | 3

- 4 **does not** go into 3, so add a zero to the 3 to make it 30 and the start of the answer is 0 therefore we need to add the decimal point here

  4 | 30 = 0.

- 4 goes into 30 7 times with 2 left over i.e. 4 x 7 = 28 with 2 remaining

  4 | 30 = 0.
  28
  2

- Our answer begins to appear as we write the 7 next to the decimal point

  4 | 30 = 0.7
  28
  2

- Next we add a zero to the remainder 2 which makes it 20

  4 | 30 = 0.7
  28
  20

- 4 goes into 20 five times

  4 | 30 = 0.7
  28
  20
  20

- So we get to add 5 to our answer

  4 | 30 = 0.75
  28
  20

- The answer is 0.75

Convert the following fractions to decimals (to 2 decimal places where required):

Fractions	Your Answer
1/5	
1/4	
9/10	
4/5	
2/3	
3/8	
5/4	
3/2	

Converting Fractions to Percentages

Please review the following online resources for further practice click here

To convert a fraction to a percentage we divide the top of the fraction by the bottom and multiply by 100, then add a percentage sign and you have your answer.

Example:

- Convert 3/4 to a percentage
- 4 **does not** go into 3
- Add a zero to the 3, and the start of the answer is 0. i.e. we need to add the decimal point here
- 4 goes into 30 7 times with 2 left over, so our answer grows to 0.7
- Add a 0 to the 2 that is left over
- 4 goes into 20 5 times and we get 0.75
- Now multiply by 0.75 by 100
- The answer is 75%

Convert the following fractions to percentages (to 2 decimal places where required):

Fractions	Your Answer
9/15	
1/3	
4/5	
3/4	
19/20	
1/50	
1/8	
3/10	

Ratios

Please review the following online resources for further practice click here

A ratio shows the relative size of two or more values. Below there are 3 black squares to 1 white square.

The total number of squares in this example is 4. This helps to work out the denominator of the fraction below.

This ratio can be written in a number of ways:

- 3:1 - using ":" to separate the values
- 3/4 - as a fraction by dividing one value by the total (3 out of 4 boxes are black)
- 0.75 - as a decimal
- 75% - as a percentage

Example:

If there is 1 boy and 3 girls you could write the ratio as:

- 1:3 (for every one boy there are 3 girls)
- ¼ are boys and ¾ are girls
- 0.25 are boys and 0.75 are girls
- 25% are boys and 75% are girls

If you need to create an equivalent larger ratio, you need to multiply both sides of the ratio.

For example: a 3:1 ratio is equivalent to a 6:2 ratio, and is equivalent to a 9:3 ratio. You can then determine a relationship with larger number of items.

Conversion – Units of Measure

Please review the following online resources for further practice click here

Quantity	Name of Unit	Symbol	Value
Length	Millimetre	mm	10mm = 1cm
	Centimetre	cm	100cm = 1m
	Metre	m	1000m = 1km
	Kilometre	km	N/A
Mass	Microgram	mcg	1000mcg = 1mg
	Milligram	mg	1000mg = 1gram
	Gram	g	1000g = 1kg
	Kilogram	kg	1000kg = 1t
	Tonne	t	N/A
Time	Second	s	60s = 1m
	Minute	min	60min = 1h
	Hour	h	24h = 1 day
	Day	day	N/A
Temperature	**Degrees Celsius**	^{o}C	N/A
Area	Square millimetres	mm^2	$100mm^2 = 1cm^2$
	Square centimetres	cm^2	$10,000cm^2 = 1m^2$
	Square metre	m^2	$10,000m^2$ =1ha
	Hectare	ha	N/A
Capacity	Millilitre	mL	1000mL = 1L
	Litre	L	N/A

(Units in bold are standard units)

The units most often used in nursing calculation are grams, micrograms, litres and millilitres.

Converting milligrams (mg) to micrograms (mcg)

If we want to convert milligrams (mg) to micrograms (mcg) we multiply by 1000 or move the decimal point three (3) places to the right.

Example:

- Convert 0.75mg to micrograms (mcg)
- 0.75 x 1,000 **or** move the decimal point 3 spaces to the right from 0.75 to 750
- The answer is 750mcg

Converting micrograms (mcg) to milligrams (mg)

If we want to convert micrograms (mcg) to milligrams (mg) we divide by 1,000 or move the decimal point three (3) places to the left.

Example:

- Convert 100mcg to milligrams (mg)
- 100 ÷ 1,000 **or** move the decimal point 3 spaces to the left from 100 to 0.1
- The answer is 0.1mg

Converting litres (L) to millilitres (mL)

Similarly with volume, if we want to convert litres (L) to millilitres (mL) we multiply by 1,000 or move the decimal point three places to the right.

Example:

- Convert 1.5L to millilitres (mL)
- 1.5 x 1,000 **or** move the decimal point 3 spaces to the right from 1.5 to 1,500
- The answer is 1,500mL

Converting millilitres (mL) to litres (L)

If we want to convert millilitres (mL) to litres (L) to we divide by 1,000 or move the decimal point three places to the left.

Example:

- Convert 50 (mL) to litres (L)
- 50 ÷ 1,000 **or** move the decimal point 3 spaces to the left from 50 to 0.05
- The answer is 0.05L

Convert the following:

Unit of Measure	Your Answer	Unit of Measure
400mcg		mg
1800mL		L
0.25L		mL
5mg		mcg
150mg		g
2000mL		L
90kg		g
0.02mg		mcg
75mcg		mg
500mL		L

Practice Test

Now let's see how you go with this!

1. Multiply	Your Answer
a. 83 x 10	
b. 0.0258 x 10	
c. 9 x 3	
d. 0.9 x 0.3	
e. 78 x 6	
f. 0.78 x 6	

2. Divide (write answer as a decimal)	Your Answer
a. 3.78 / 10	
b. 569 / 10	

3. Convert	Your Answer
a. 1kg	g
b. 1g	mg
c. 1mg	mcg
d. 1L	mL
e. 0.045g =	mg
f. 0.45g =	mg

4. Change	Your Answer
a. 0.83kg =	gm
b. 6400g =	kg
c. 0.78g =	mg
d. 34mg =	g
e. 0.086mg =	mcg
f. 294mcg =	mg
g. 2.4L =	mL
h. 965mL =	L
i. 0.07L	mL
j. 0.007L	mL

5. Circle the following numbers which are: (use the space below to calculate)
Factors of 48 2, 3, 4, 5, 6, 10, 12

6. Circle the following numbers which are: (use the space below to calculate)

Factors of 126

2, 3, 5, 7, 9, 11

7. Simplify or cancel down: (use the space below to calculate)

a. 16/24

b. 56/72

Continued….Simplify or cancel down: (use the space below to calculate)
c. 45/600
d. 175/400
e. 40/50
f. 60/90
g. 350/500

Continued….Simplify or cancel down: (use the space below to calculate)
h. 1200/500
i. 65/20
j. 700/12
k. 700/120
l. 400/125

8. Round off each number to one decimal place	Your Answer
a. 0.68	
b. 1.82	

9. Round off each number to two decimal places	Your Answer
a. 0.374	
b. 2.625	

10. Round off each number to three decimal places	Your Answer
a. 1.6081	
b. 0.5698	

Answers

1. Multiply
- a. 830
- b. 0.258
- c. 27
- d. 0.27
- e. 468
- f. 4.68

2. Divide
- a. 0.378
- b. 56.9

3. Convert
- a. 1,000g
- b. 1,000mg
- c. 1,000mcg
- d. 1,000mL
- e. 45mg
- f. 450mg

4. Change
- a. 830gm
- b. 6.4kg
- c. 780mg
- d. 0.034g
- e. 86mcg
- f. 0.294mg
- g. 2,400mL
- h. 0.965L
- i. 70mL
- j. 7mL

5. Factors of 48
- a. 2, 3, 4, 6, 12

6. Factors of 126
- a. 2, 3, 5, 7, 9, 11

7. Simplify or Cancel Down
- a. 2/3
- b. 7/9
- c. 3/40
- d. 7/16
- e. 4/5
- f. 2/3
- g. 7/10
- h. 4/5
- i. 3 1/4
- j. 58 1/3
- k. 5 5/6
- l. 3 1/5

8. Round to 1 Decimal Place
- a. 0.7
- b. 1.8

9. Round to 2 Decimal Places
- a. 0.37
- b. 2.63

10. Round to 3 Decimal Places
- a. 1.608
- b. 0.570