

ThemeVille[™]
Math
See the themes behind the details

Avi Patil, Ph.D.

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Sample page

ThemeVille Math 5

Worktext

Second Edition

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Sample page

Contents

	Title	Page numbers*
	Preface	vii
1	Decimals	1/3
2	Long Multiplication	5/7
3	Long Division	9/11
4	Fractions	13/15
5	Mixed numbers	17/19
6	Fraction operations	21/23
7	Addition/Subtraction with Fractions	25/27
8	Expansion/Reduction of Fractions	29/31
9	Time	33/35
10	Time	37/39
11	Decimals – Thousandths	41/43
12	Decimals – Thousandths	45/47
13	Decimals – Thousandths	51/53
14	Multiplying a fraction by a whole number	55/57
15	multiplying a fraction by a whole number	59/61
16	multiplying a fraction by a whole number	63/65
17	Quarter/Half	67/69
18	Fraction – Decimal conversion	71/73
19	Decimals: Words – Numerals	75/77
20	Division of a fraction by a whole number	79/81
21	Division of a fraction by a whole number	85/87
22	Operations with fractions	89/91
23	Operations with fractions	93/95
24	Decimals: Words – Numerals	97/99
25	Division of a fraction by a whole number	101/103
26	Fraction operations with bar diagrams	105/107
27	Dividing a length of fractional units	111/113
28	Comparison of decimals	115/117
29	Multiplication of fractions	119/121
30	Fraction of a length	125/127
	Test 1	129
31	Multiplication/Division by 1000	131/133
32	Rounding of decimals	135/137

*The first and second page numbers are for pre-lesson and lesson respectively.

Sample page

	Title	Page numbers
33	Multiplication of fractions	139/141
34	Multiplication of fractions	143/145
35	Weight and Liquid units	147/149
36	Fraction Problems	151/153
37	Fraction Problems	155/157
38	Decimals multiplication	159/161
39	Decimals multiplication	163/165
40	Fraction Problems	167/169
Test 2		171
41	Decimals multiplication	173/175
42	Decimals multiplication	177/179
43	Fraction multiplication with Area	181/183
44	Fraction multiplication with Area	185/187
45	Fraction multiplication with Area	189/191
46	Decimals multiplication	193/195
47	Multiplication/Division of Fractions	197/199
48	Operations with Fractions	201/203
49	Multiplication/Division of Fractions	205/207
50	Decimals multiplication	209/211
Test 3		213
51	Decimals multiplication	215/217
52	Unknown in an expression	219/221
53	Decimals multiplication	223/225
54	Division by Fractions	227/229
55	Multiplication/Division by Fractions	233/235
56	Decimals – Long Multiplication	239/241
57	Decimals – Long Multiplication	243/245
58	Unknown in an expression	247/249
59	Unknown in an expression	251/253
60	Long division with decimals	255/257
Test 4		259
61	Long division with decimals	261/263
62	Long division with decimals	265/267
63	Multiplication/Division of Fractions	269/271
64	Long division with decimals	275/277
65	Long division with decimals	279/281
66	Long division with decimals	283/285

Sample page

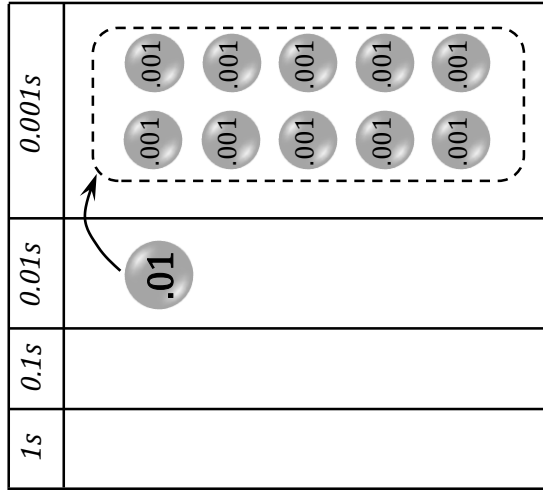
	Title	Page numbers
67	Multiplication/Division of Fractions	287/289
68	Fraction Problems	291/293
69	Fraction Problems	295/297
70	Multiplication/Division of Fractions	299/301
	Test 5	303
71	Multiplication/Division of Fractions	305/307
72	Long division with decimals	309/311
73	Long division with decimals	313/315
74	Division of Fractions	317/319
75	Division of Fractions	323/325
76	Long division with decimals	329/331
77	Long division with decimals	335/337
78	Division of Fractions	339/341
79	Decimal Problems	345/347
80	Division of Fractions	351/353
	Test 6	357
81	Area with fraction/decimal units	359/361
82	Decimal multiplication with Area	365/367
83	Decimal multiplication with Area	369/371
84	Division of Fractions	375/377
85	Long division	381/383
86	Fraction Units	387/389
87	Multiplication/Division of Fractions	391/393
88	Multiplication/Division of Fractions	395/397
89	Fraction Problems	399/401
90	Multiplication/Division with Fractions	405/407
	Test 7	409
91	Multiplication/Division with Fractions	411/413
92	Division by decimals	415/417
93	Plotting a graph	419/421
94	Plotting a graph	423/425
95	Plotting a graph	427/429
96	Exponents	431/433
97	Exponents	435/437
98	Division by decimals	439/441
99	Division by decimals	443/445
100	Multiplication/Division of decimals	447

Sample page

	Title	Page numbers
Test 8	. . . . .	451
101	Decimals till millionth	453/455
102	Decimal Problems	459/461
103	Combined Operations	463/465
104	Combined Operations	467/469
105	Combined Operations	471/473
106	Decimal Problems	475/477
107	Decimal Problems	479/481
108	Decimals till millionth	483/485
109	Working with units	487/489
110	Working with units	491/493
Test 9	. . . . .	495
111	Angles	497/499
112	Angles	503/505
113	Angles	509/511
114	Angles	513/515
115	Working with units	519/521
116	Working with units	523/525
117	Volume	527/529
118	Volume	533/535
119	Fraction Problems	537/539
120	Decimal Problems	541/543
121	Angles	545/547
122	Angles	551/553
123	Angles	557/559
Test 10	. . . . .	561
Appendix A	. . . . .	A-1

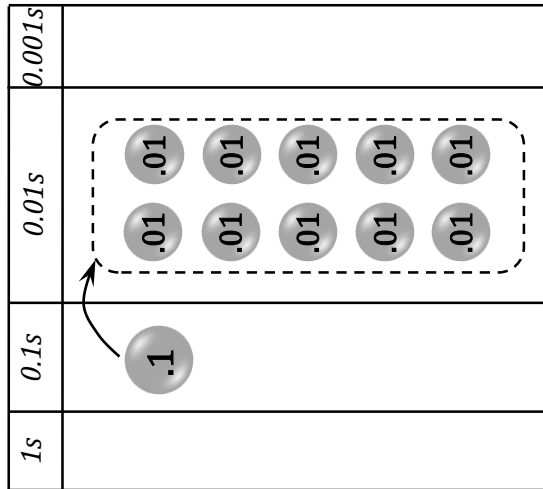
Decimals – Thousandths

Regrouping of 0.01 to 0.001s



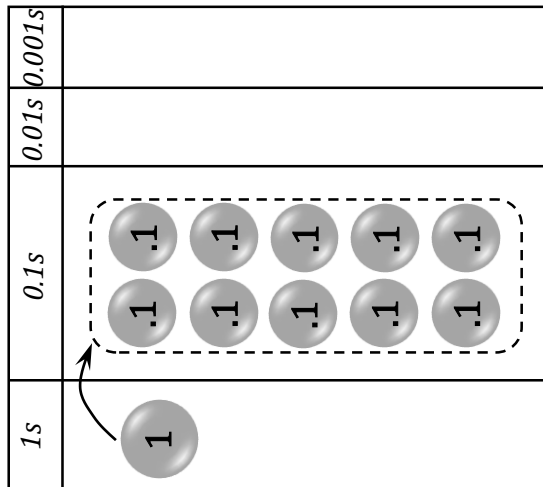
0.01 is composed of ten 0.001s

Regrouping of 0.1 to 0.01s

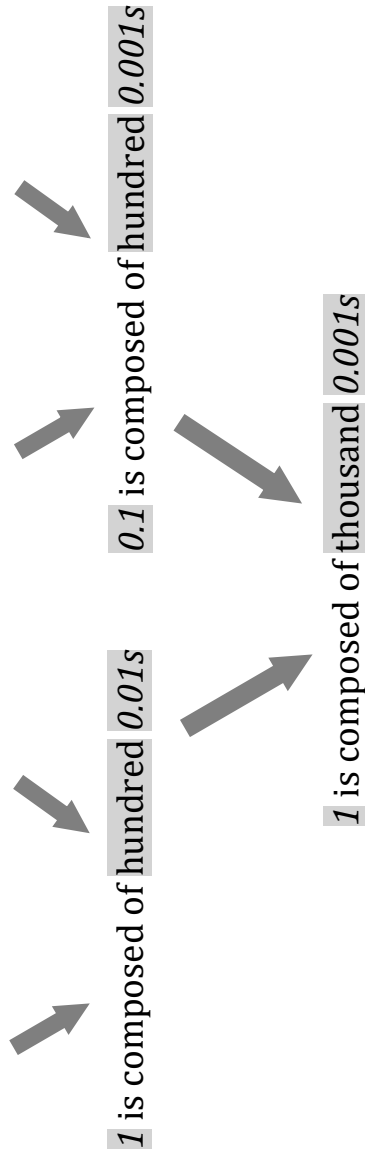


0.1 is composed of ten 0.01s

Regrouping of 1 to 0.1s



1 is composed of ten 0.1s



Sample page

<i>1s</i>	<i>0.1s</i>	<i>0.01s</i>	<i>0.001s</i>
2	.0	4	
2	.0	0	4



<i>1s</i>	<i>0.1s</i>	<i>0.01s</i>	<i>0.001s</i>
1 1	.1 .1 .1	.01 .01 .01	.001 .001 .001
1 1	.1 .1 .1	.01 .01 .01	.001 .001 .001
1 1	.1 .1 .1	.01 .01 .01	.001 .001 .001
1 1	.1 .1 .1	.01 .01 .01	.001 .001 .001
1 1	.1 .1 .1	.01 .01 .01	.001 .001 .001
1	.1 .1 .1	.01 .01 .01	.001 .001 .001
1	.1 .1 .1	.01 .01 .01	.001 .001 .001

Multiplying a fraction by a whole number

Write whole numbers in fractions format:

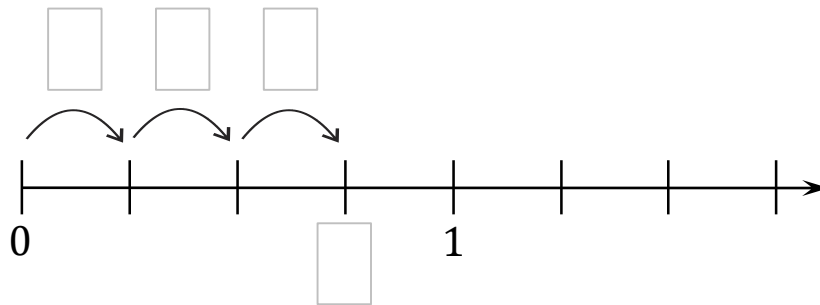
$$2 = \frac{2}{1} \quad , \quad 4 = \frac{\square}{\square} \quad , \quad 7 = \frac{\square}{\square} \quad , \quad 3 = \frac{\square}{\square} \quad , \quad 10 = \frac{\square}{\square}$$

Compute the answer by addition as well as with multiplication:

$$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{\square}{\square}$$

$$\frac{\square}{\square} \text{ taken 3 times} \rightarrow \frac{1}{4} \times 3 = \frac{1}{4} \times \frac{3}{1} = \frac{3}{4}$$

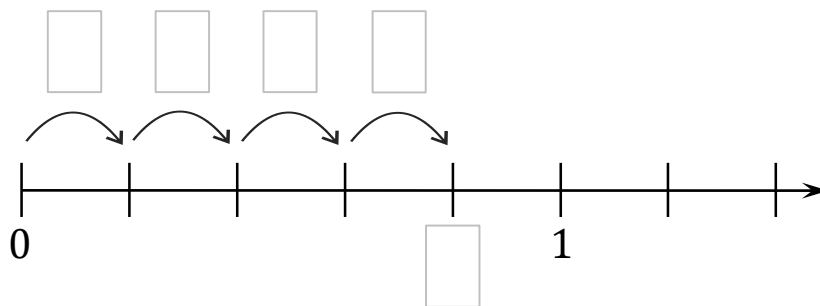
Multiply \curvearrowright
 Multiply \curvearrowleft



$$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \frac{\square}{\square}$$

$$\frac{\square}{\square} \text{ taken } \square \text{ times} \rightarrow \frac{\square}{\square} \times \square = \frac{\square}{\square} \times \frac{\square}{1} = \frac{\square}{\square}$$

Multiply \curvearrowright
 Multiply \curvearrowleft



Sample page

$$\frac{2}{7} + \frac{2}{7} = \frac{\square}{\square} \Rightarrow \frac{\square}{\square} \text{ taken } \square \text{ times} \rightarrow \frac{\square}{\square} \times \square = \frac{\square}{\square} \times \frac{\square}{1} = \frac{\square}{\square}$$

Multiply \curvearrowright
 Multiply \curvearrowright

$$\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \frac{\square}{\square}$$

$$\frac{\square}{\square} \text{ taken } \square \text{ times} \rightarrow \frac{\square}{\square} \times \square = \frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$$

Multiply \curvearrowright
 Multiply \curvearrowright

$$\frac{2}{5} + \frac{2}{5} = \frac{\square}{\square} \Rightarrow \frac{\square}{\square} \text{ taken } \square \text{ times} \rightarrow \frac{\square}{\square} \times \square = \frac{\square}{\square} \times \frac{\square}{1} = \frac{\square}{\square}$$

Multiply \curvearrowright
 Multiply \curvearrowright

$$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{\square}{\square}$$

$$\frac{\square}{\square} \text{ taken } \square \text{ times} \rightarrow \frac{\square}{\square} \times \square = \frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$$

$$\frac{3}{10} + \frac{3}{10} + \frac{3}{10} = \frac{\square}{\square}$$

$$\frac{\square}{\square} \text{ taken } \square \text{ times} \rightarrow \frac{\square}{\square} \times \square = \frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$$

$$\frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} = \frac{\square}{\square}$$

$$\frac{\square}{\square} \text{ taken } \square \text{ times} \rightarrow \frac{\square}{\square} \times \square = \frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square}$$

$$\frac{4}{9} + \frac{4}{9} = \frac{\square}{\square} \Rightarrow \frac{\square}{\square} \text{ taken } \square \text{ times} \rightarrow \frac{\square}{\square} \times \square = \frac{\square}{\square} \times \frac{\square}{1} = \frac{\square}{\square}$$

Fraction – Decimal conversion

Convert the following decimals to fractions:

Decimal point moved by 3 digits. Denominator has 3 zeros.

$$6.\overset{\curvearrowright}{7}\overset{\curvearrowright}{4}\overset{\curvearrowright}{2} = 6\frac{742}{1000}$$

Decimal point moved by digits. Denominator has zeros.

$$6.\overset{\curvearrowright}{7}\overset{\curvearrowright}{3} = 6\frac{73}{100}$$

Decimal point moved by digit. Denominator has zero.

$$3.\overset{\curvearrowright}{8} = 3\frac{8}{10}$$

$9.234 = \square\frac{\square}{\square}$	$9.23 = \square\frac{\square}{\square}$	$9.2 = \square\frac{\square}{\square}$
$5.76 = \square\frac{\square}{\square}$	$2.8 = \square\frac{\square}{\square}$	$8.723 = \square\frac{\square}{\square}$
$3.6 = \square\frac{\square}{\square}$	$8.701 = \square\frac{\square}{\square}$	$1.03 = \square\frac{\square}{\square}$
$3.08 = \square\frac{\square}{\square}$	$3.08 = \square\frac{\square}{\square}$	$3.008 = \square\frac{\square}{\square}$
$5.07 = \square\frac{\square}{\square}$	$3.6 = \square\frac{\square}{\square}$	$8.004 = \square\frac{\square}{\square}$

Sample page

Convert the following fractions to decimals:

$$6 \frac{\overbrace{485}^{\curvearrowright \curvearrowright \curvearrowright}}{\underbrace{1000}_{\curvearrowleft \curvearrowleft \curvearrowleft}} = 6.485 \rightarrow \begin{array}{l} \text{How many zeros in the denominator? } 3 \\ \text{Move decimal point for numerator by } 3 \text{ digits.} \end{array}$$

$$5 \frac{\overbrace{47}^{\curvearrowright \curvearrowright}}{\underbrace{1000}_{\curvearrowleft \curvearrowleft \curvearrowleft}} = 5.047 \rightarrow \begin{array}{l} \text{How many zeros in the denominator? } \dots\dots \\ \text{Move decimal point for numerator by } \dots\dots \text{ digits.} \end{array}$$

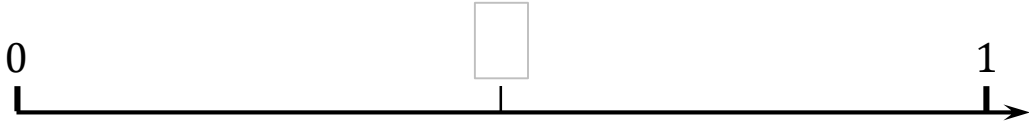
$$7 \frac{\overbrace{4}^{\curvearrowright}}{\underbrace{100}_{\curvearrowleft \curvearrowleft}} = 7.04 \rightarrow \begin{array}{l} \text{How many zeros in the denominator? } \dots\dots \\ \text{Move decimal point for numerator by } \dots\dots \text{ digits.} \end{array}$$

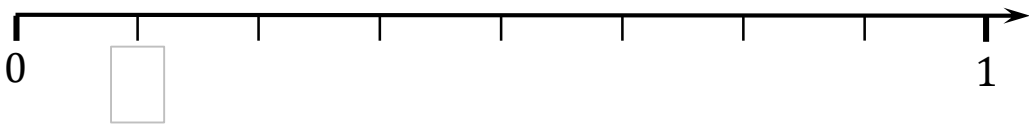
$2 \frac{967}{1000} = 2.967$	$2 \frac{67}{1000} = 2.067$	$2 \frac{7}{1000} = 2.007$
$3 \frac{967}{1000} = \dots\dots\dots$	$2 \frac{67}{1000} = \dots\dots\dots$	$2 \frac{7}{1000} = \dots\dots\dots$
$7 \frac{6}{1000} = \dots\dots\dots$	$8 \frac{75}{1000} = \dots\dots\dots$	$1 \frac{843}{1000} = \dots\dots\dots$
$2 \frac{73}{1000} = \dots\dots\dots$	$5 \frac{8}{1000} = \dots\dots\dots$	$5 \frac{374}{1000} = \dots\dots\dots$
$2 \frac{9}{1000} = \dots\dots\dots$	$4 \frac{268}{1000} = \dots\dots\dots$	$9 \frac{83}{1000} = \dots\dots\dots$
$8 \frac{15}{1000} = \dots\dots\dots$	$6 \frac{7}{1000} = \dots\dots\dots$	$2 \frac{268}{1000} = \dots\dots\dots$
$5 \frac{3}{1000} = \dots\dots\dots$	$3 \frac{542}{1000} = \dots\dots\dots$	$3 \frac{67}{1000} = \dots\dots\dots$
$7 \frac{782}{1000} = \dots\dots\dots$	$9 \frac{4}{1000} = \dots\dots\dots$	$5 \frac{38}{1000} = \dots\dots\dots$

Division of a fraction by a whole number

Fill in the blanks:


$$\frac{1}{2} \div 4$$

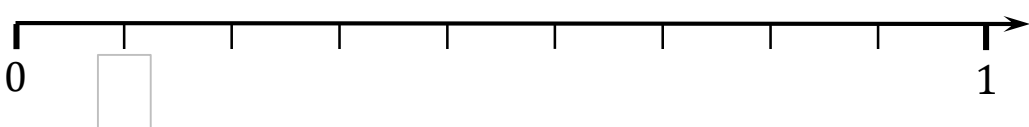
$$= \frac{\square}{\square} \div \frac{\square}{\square}$$


$$= \frac{\square}{\square} \times \frac{\square}{\square}$$


$$= \frac{\square}{\square}$$


$$\frac{1}{3} \div 3$$

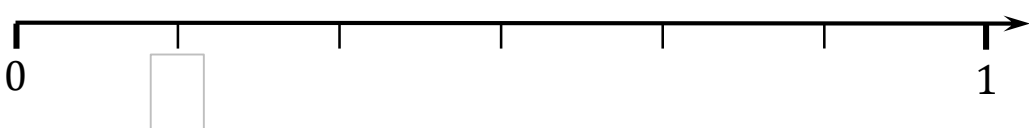
$$= \frac{\square}{\square} \div \frac{\square}{\square}$$


$$= \frac{\square}{\square} \times \frac{\square}{\square}$$


$$= \frac{\square}{\square}$$

$$\frac{2}{3} \div 4$$

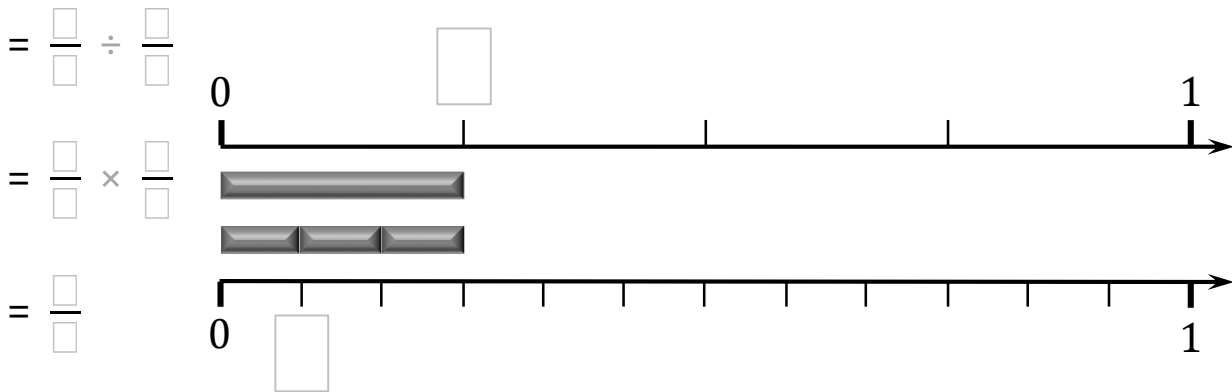
$$= \frac{\square}{\square} \div \frac{\square}{\square}$$


$$= \frac{\square}{\square} \times \frac{\square}{\square}$$


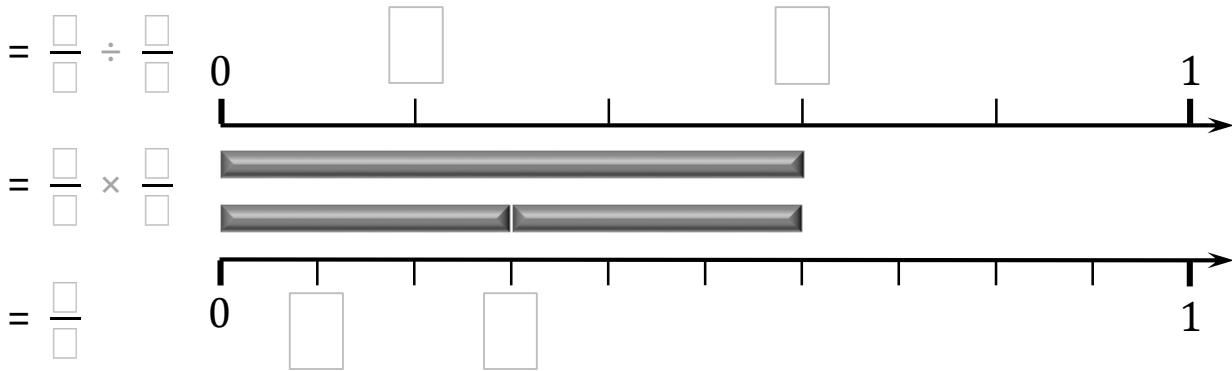
$$= \frac{\square}{\square}$$

Sample page

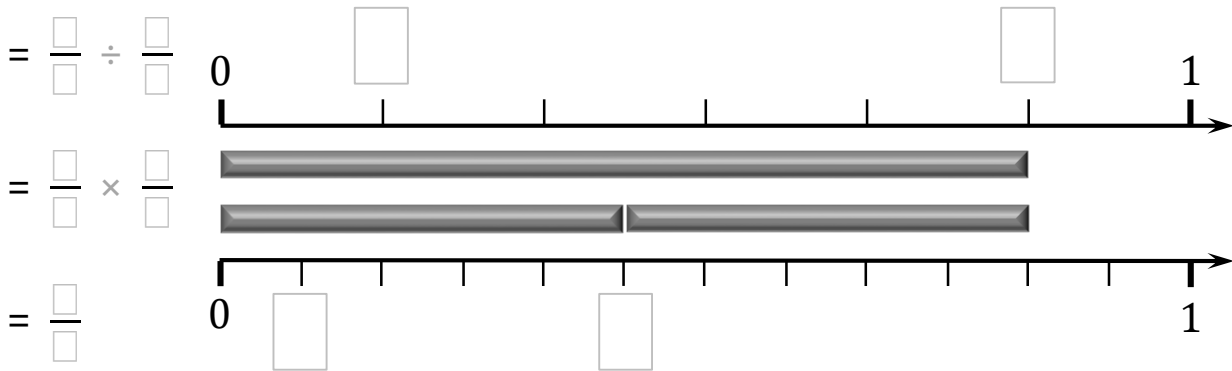
$$\frac{1}{4} \div 3$$



$$\frac{3}{5} \div 2$$



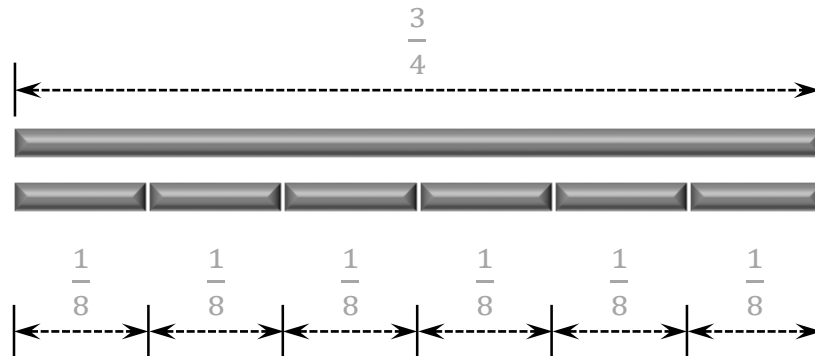
$$\frac{5}{6} \div 2$$



Fraction operations with bar diagrams

For the following problems, (1) Perform the division (2) Fill in the diagram (3) Write in multiplication format (4) Write in addition format.

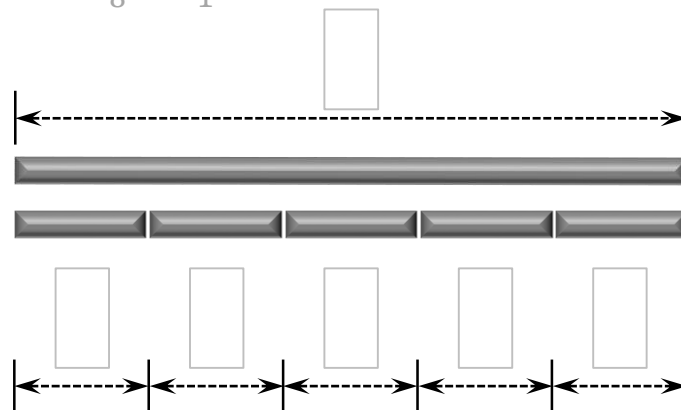
$$\frac{3}{4} \div 6 = \frac{3}{4} \times \frac{1}{6} = \frac{1}{8}$$



Multiplication format: $\frac{1}{8} \times 6 = \frac{1}{8} \times \frac{6}{1} = \frac{3}{4}$

Addition format: $\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{6}{8} = \frac{3}{4}$

$$1\frac{7}{8} \div 5 = \frac{15}{8} \div \frac{5}{1} =$$

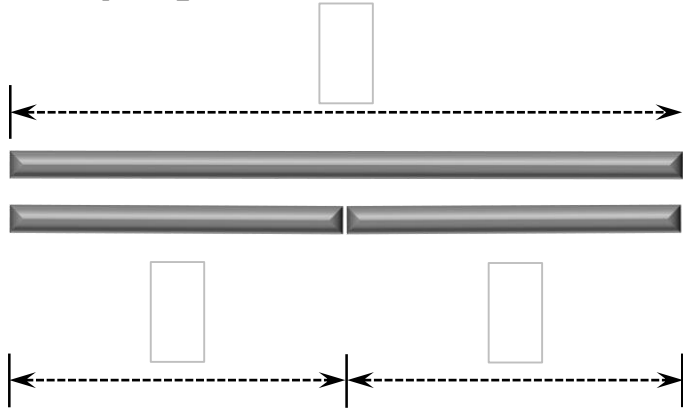


Multiplication format:

Addition format:

Sample page

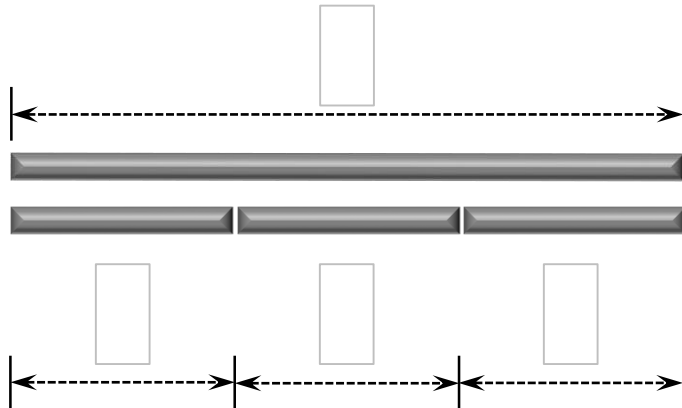
$$1\frac{1}{4} \div 2 = \frac{5}{4} \div \frac{2}{1} =$$



Multiplication format:

Addition format:

$$1\frac{7}{8} \div 3 =$$



Multiplication format:

Addition format:

Fraction of a length

Find the unknown dimensions below:

$\frac{7}{10}$ inch

[] inch

$\frac{[]}{[]}$ of $\frac{[]}{[]}$ inch

=

$\frac{11}{15}$ inch

[] inch

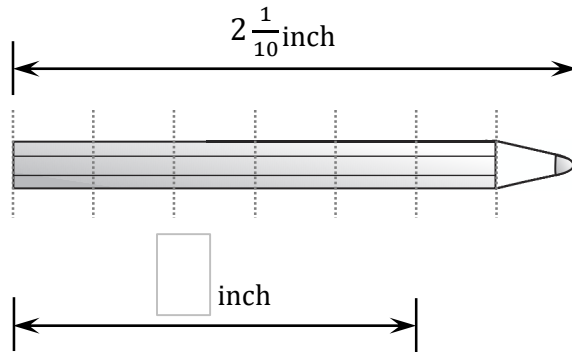
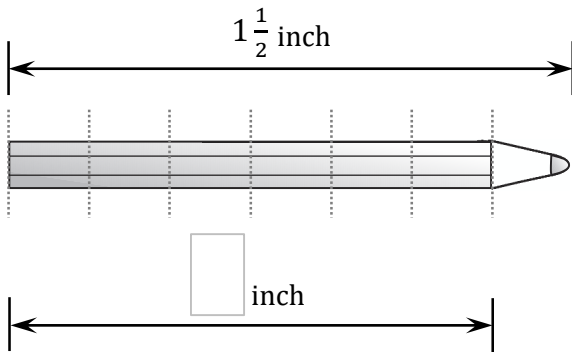
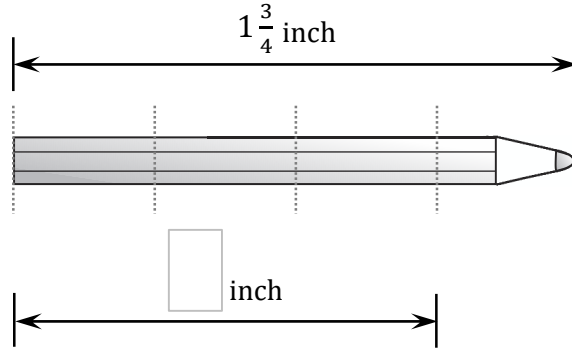
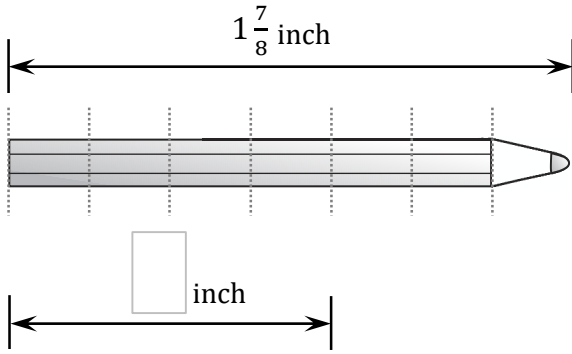
$\frac{8}{9}$ inch

[] inch

$\frac{11}{12}$ inch

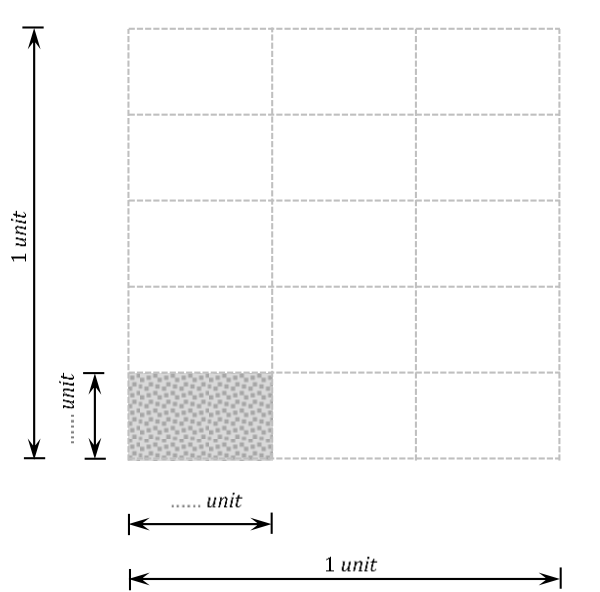
[] inch

Sample page

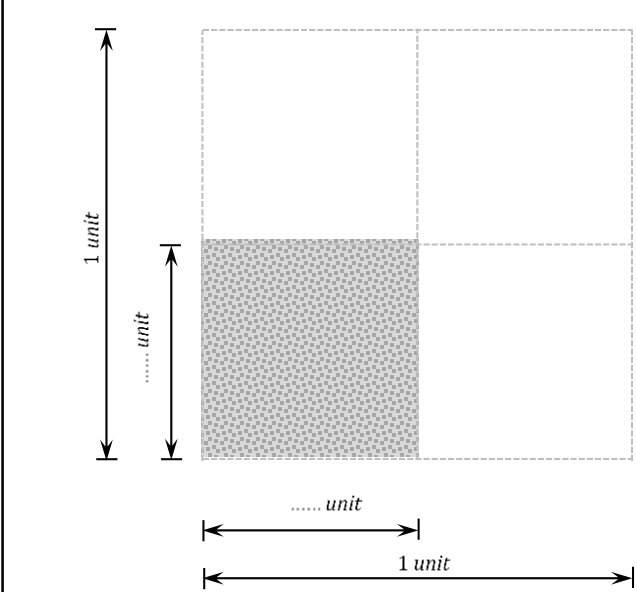


Fraction multiplication with Area

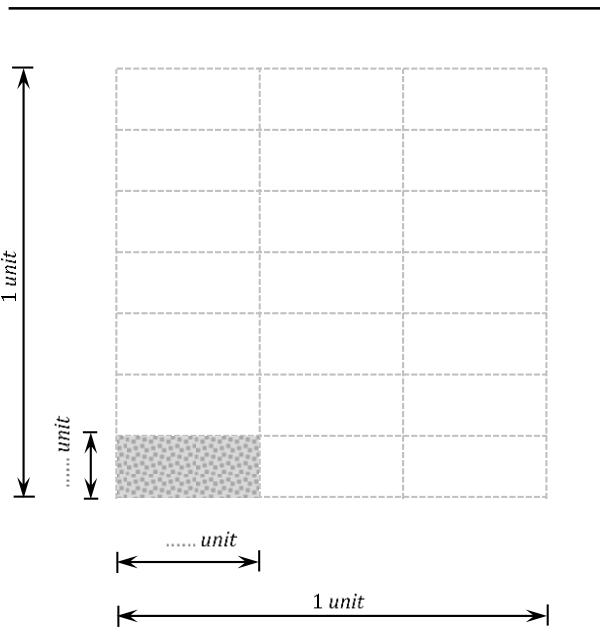
Calculate areas of unit cells:



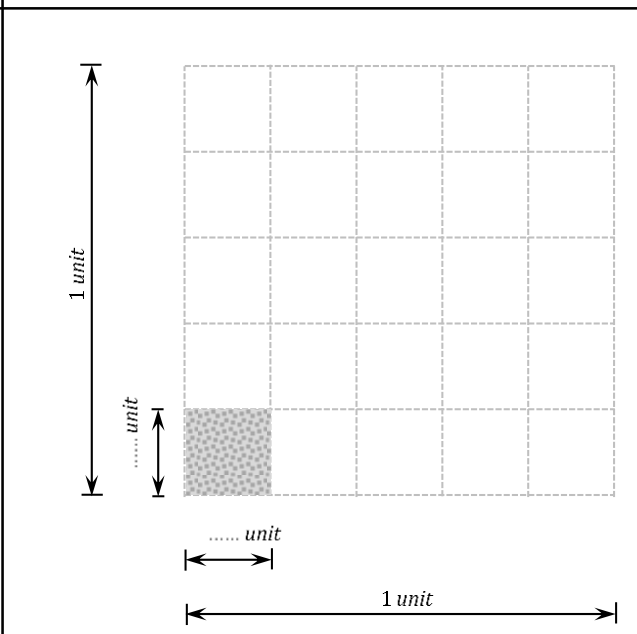
$$\begin{aligned} \text{Area of a unit cell} &= \frac{1}{3} \times \frac{1}{5} \\ &= \frac{1}{15} \text{ unit}^2 \end{aligned}$$



$$\begin{aligned} \text{Area of a unit cell} &= \frac{\square}{\square} \times \frac{\square}{\square} \\ &= \frac{\square}{\square} \text{ unit}^2 \end{aligned}$$

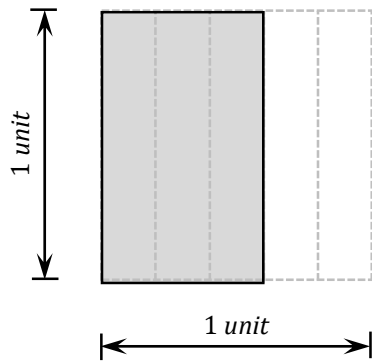


$$\begin{aligned} \text{Area of a unit cell} &= \frac{\square}{\square} \times \frac{\square}{\square} \\ &= \frac{\square}{\square} \text{ unit}^2 \end{aligned}$$

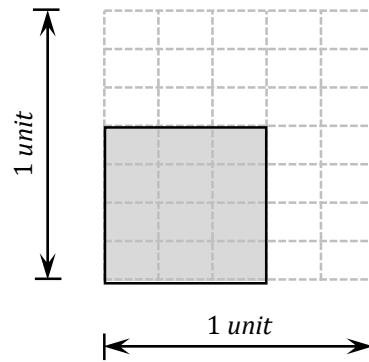


$$\begin{aligned} \text{Area of a unit cell} &= \frac{\square}{\square} \times \frac{\square}{\square} \\ &= \frac{\square}{\square} \text{ unit}^2 \end{aligned}$$

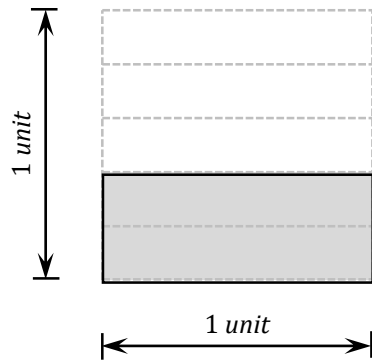
Sample page



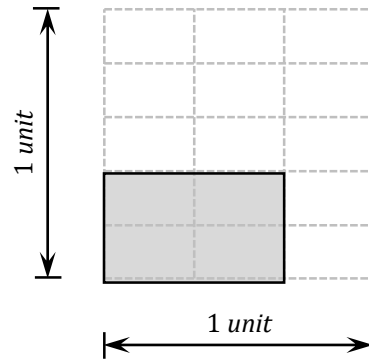
Area of a grey rectangle } = × = *unit*²



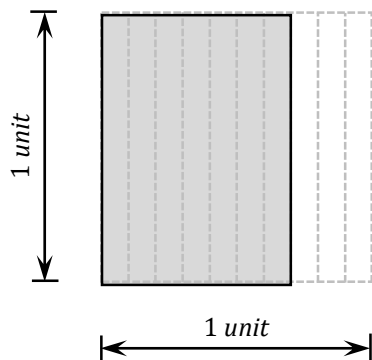
Area of a grey rectangle } = × = *unit*²



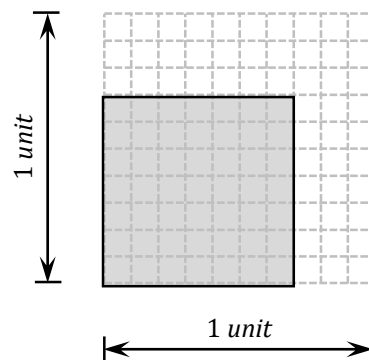
Area of a grey rectangle } = × = *unit*²



Area of a grey rectangle } = × = *unit*²



Area of a grey rectangle } = × = *unit*²



Area of a grey rectangle } = × = *unit*²

To the Teacher: (1) Material needed: Area overlays for fractions (2) After solving few problems, please ask to show the areas with overlays.

Decimals – Long Multiplication

Perform the following long multiplications:

$$0.32 \times 0.4$$

$$= \frac{32}{100} \times \frac{4}{10}$$

$$= \frac{32 \times 4}{1000} \xrightarrow{\text{Multiply without decimal points}}$$

$$= \frac{128}{1000} \xleftarrow{\hspace{10em}}$$

$$= 0.128$$

$$\begin{array}{r} \hline 32 \\ \times 4 \\ \hline 128 \\ \hline \end{array}$$

$$0.43 \times 0.3$$

$$= \frac{\square}{100} \times \frac{\square}{10}$$

$$= \frac{\square \times \square}{1000} \xrightarrow{\text{Multiply without decimal points}}$$

$$= \frac{\square}{1000} \xleftarrow{\hspace{10em}}$$

$$= \dots\dots\dots$$

$$\begin{array}{r} \hline \\ \times \\ \hline \\ \hline \end{array}$$

$$0.75 \times 0.5$$

$$= \frac{\square}{100} \times \frac{\square}{10}$$

$$= \frac{\square \times \square}{1000} \xrightarrow{\text{Multiply without decimal points}}$$

$$= \frac{\square}{1000} \xleftarrow{\hspace{10em}}$$

$$= \dots\dots\dots$$

$$\begin{array}{r} \hline \\ \times \\ \hline \\ \hline \end{array}$$

Sample page

Perform the following long multiplications:

0.37×0.5 $\xrightarrow{\text{Multiply without decimal points}}$

$= 0.185$ \swarrow How many decimal digits altogether? 3

\times

3	
37	
185	

0.56×0.9 $\xrightarrow{\text{Multiply without decimal points}}$

$= \dots\dots\dots$ \swarrow How many decimal digits altogether?

\times

3.6×4 $\xrightarrow{\text{Multiply without decimal points}}$

$= \dots\dots\dots$ \swarrow How many decimal digits altogether?

\times

48×0.05 $\xrightarrow{\text{Multiply without decimal points}}$

$= \dots\dots\dots$ \swarrow How many decimal digits altogether?

\times

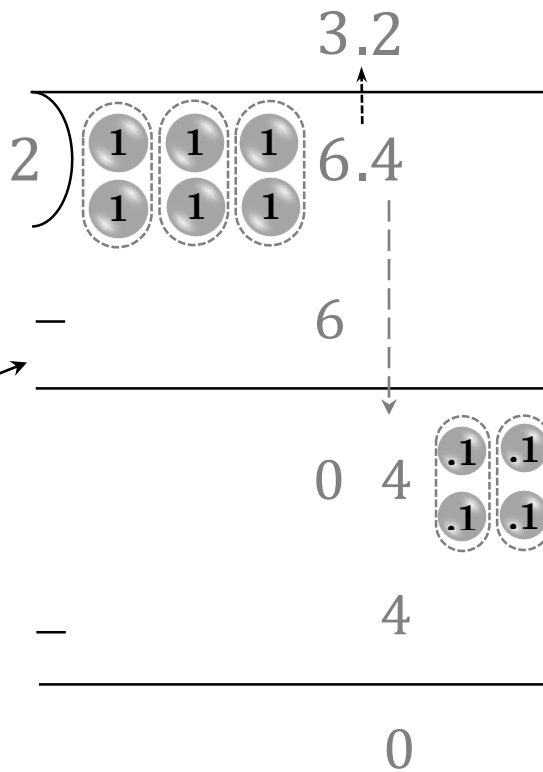
Long division with decimals

$6.4 \div 2 \rightarrow$

Step 1:
How many
2s in 6?

Step 2:
Multiply,
 $2 \times 3 = 6$

Step 3:
Subtract



Step 4:
Write decimal point up
in the answer field

Step 5:
Bring down the next digit

Step 6:
How many 2s in 4?

Step 7:
Multiply,
 $2 \times 2 = 4$

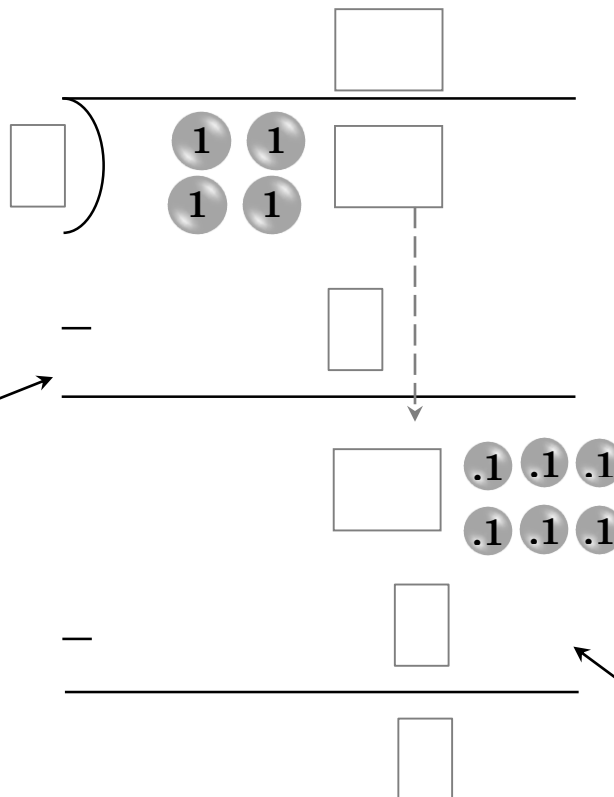
Step 8:
Subtract

$4.6 \div 2 \rightarrow$

Step 1:
How many
2s in 4?

Step 2:
Multiply,
... \times ... = ...

Step 3:
Subtract



Step 4:
Write decimal point up
in the answer field

Step 5:
Bring down the next digit

Step 6:
How many 2s in 6?

Step 7:
Multiply,
... \times ... = ...

Step 8:
Subtract

Sample page

$4.8 \div 4 \rightarrow$

	□								
4)	□	□	□	□	□	□	□	□
		4.8							

$9.6 \div 3 \rightarrow$

	□								
)	□	□	□	□	□	□	□	□

$8.6 \div 2 \rightarrow$

	□								
)	□	□	□	□	□	□	□	□

$6.8 \div 2 \rightarrow$

	□								
)	□	□	□	□	□	□	□	□

$4.8 \div 4 \rightarrow$

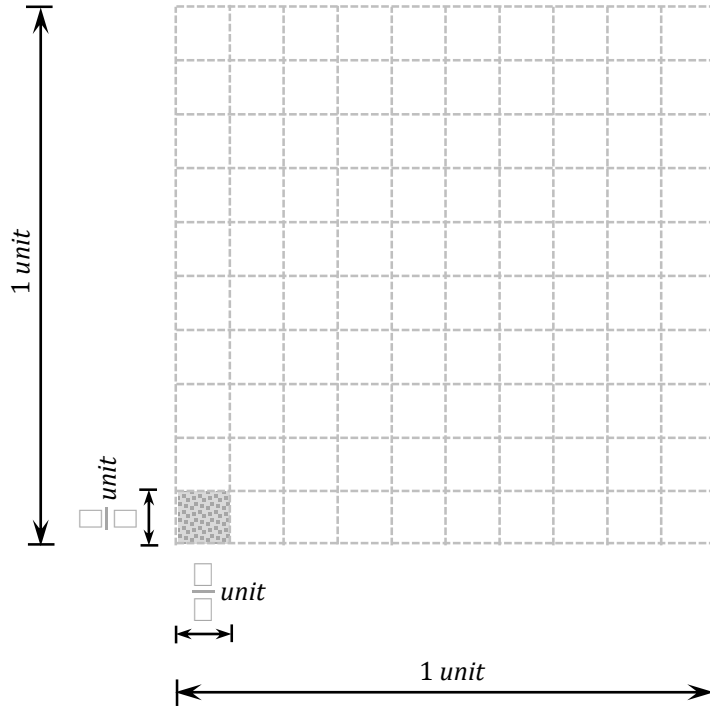
	□								
)	□	□	□	□	□	□	□	□

$4.8 \div 2 \rightarrow$

	□								
)	□	□	□	□	□	□	□	□

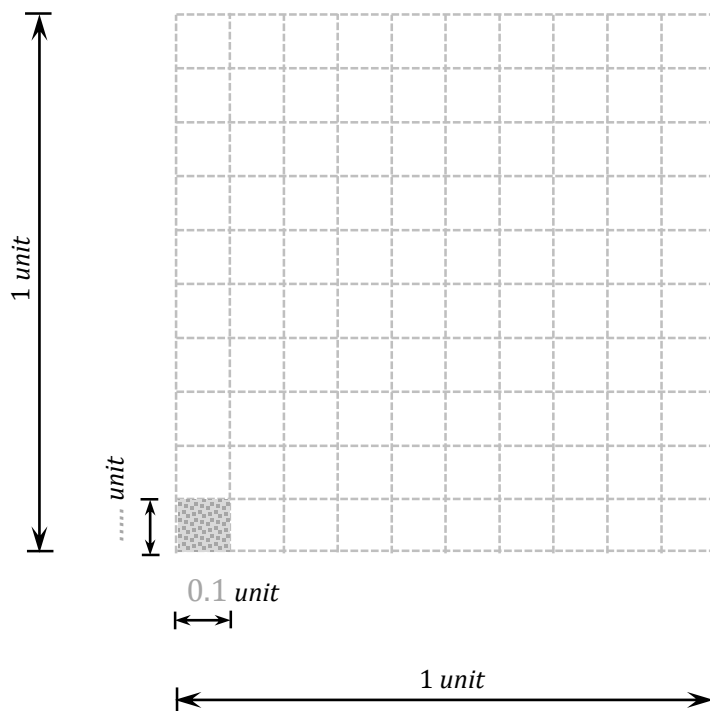
Area with fraction/decimal units

Calculate areas below:



Use fractions below

$$\begin{aligned} \text{Area of a unit cell} &= \frac{\square}{\square} \times \frac{\square}{\square} \\ &= \frac{\square}{\square} \text{ unit}^2 \end{aligned}$$

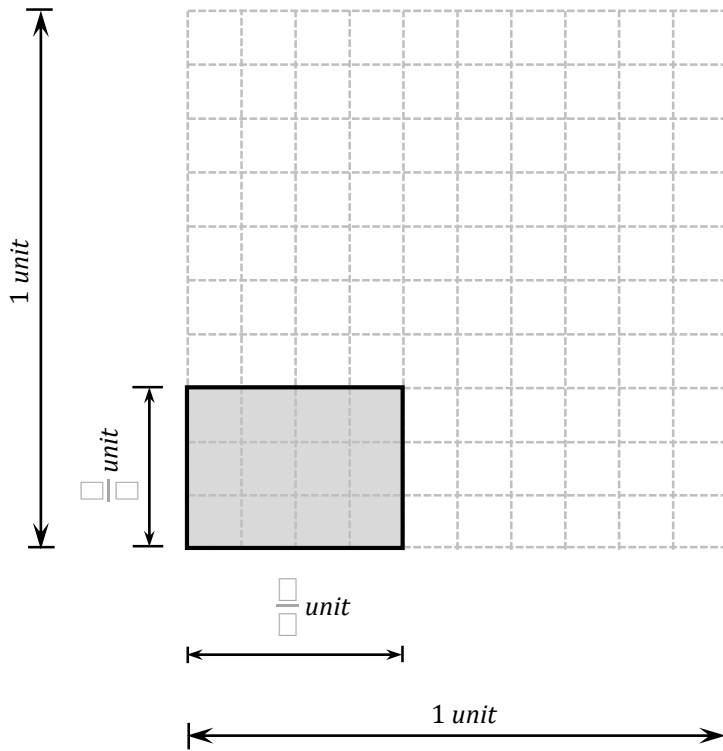


Use decimals below

$$\begin{aligned} \text{Area of a unit cell} &= \dots\dots \times \dots\dots \\ &= \dots\dots \text{ unit}^2 \end{aligned}$$

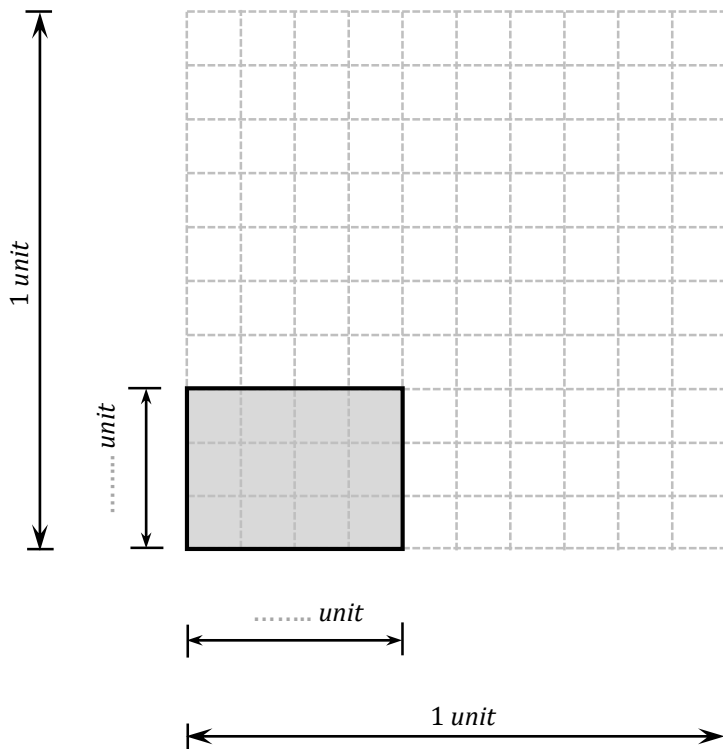
Is shaded area same for the above two problems?

Sample page



Use fractions below

$$\begin{aligned} \text{Area of a grey rectangle} \} &= \frac{\square}{10} \times \frac{\square}{10} \\ &= \frac{\square}{100} \text{ unit}^2 \end{aligned}$$



Use decimals below

$$\begin{aligned} \text{Area of a grey rectangle} \} &= \dots \times \dots \\ &= \dots \text{ unit}^2 \end{aligned}$$

Is shaded area same for the above two problems?

Fraction Units

Buying activity: An activity of buying involves paying a certain amount for a certain quantity.

For example - \$3 per pound sugar (i.e. \$3 is needed for each pound of sugar)

I bought 4 *lb* of sugar for \$3. What is the cost of sugar per pound?

$$\frac{\text{dollars}}{\text{lb}} = 3 \div 4 = \frac{\square}{\square}$$

Cost of sugar is $\frac{\square}{\square}$ *dollar per pound*.

If I write four and a quarter pages in three quarters of an hour, what is my writing speed per hour?

$$\frac{\text{pages}}{\text{hr}} =$$

My writing speed is *per*

If a car drives sixty miles in one and half hour, what was its speed per hour?

$$\frac{\text{.....}}{\text{.....}} =$$

The car was driving at a speed of *per*

If three bags could contain four pound sugar, how much sugar could be filled per bag?

$$\frac{\text{.....}}{\text{.....}} =$$

The capacity a bag is *per bag*

If five eighth of a bottle could hold three quarter gallon water, how much water could be filled in one bottle?

$$\frac{\text{.....}}{\text{.....}} =$$

The capacity of a bottle is *per bottle*

Sample page

If a car drives forty five miles in three quarters of an hour, what was its speed per hour?

$$\frac{\text{.....}}{\text{.....}} =$$

The car was driving at a speed of *per*

If a car needs one and three quarter gasoline to drive thirty five miles, what is the gas mileage of this car in *miles per gallon*?

$$\frac{\text{.....}}{\text{.....}} =$$

The gas mileage of the car is *per*

If two and half bags could contain one and quarter pound sugar, how much sugar could be filled per bag?

$$\frac{\text{.....}}{\text{.....}} =$$

The capacity a bag is *per bag*

I bought 7 *lb* wheat for \$2. Cost of wheat is $\frac{\square}{\square}$ *per*

I bought 7 *inch* of string for \$4. Cost of string is $\frac{\square}{\square}$ *per*

I bought 3 *lb* of butter for \$8. Cost of butter is $\frac{\square}{\square}$ *per*

I bought 8 *lb* of wheat for \$3. Cost of wheat is $\frac{\square}{\square}$

I bought 7 *lb* of butter for \$4. Cost of butter is $\frac{\square}{\square}$

I bought 9 *inch* of string for \$5. Cost of string is $\frac{\square}{\square}$

I bought 10 *lb* of sugar for \$3. Cost of sugar is $\frac{\square}{\square}$

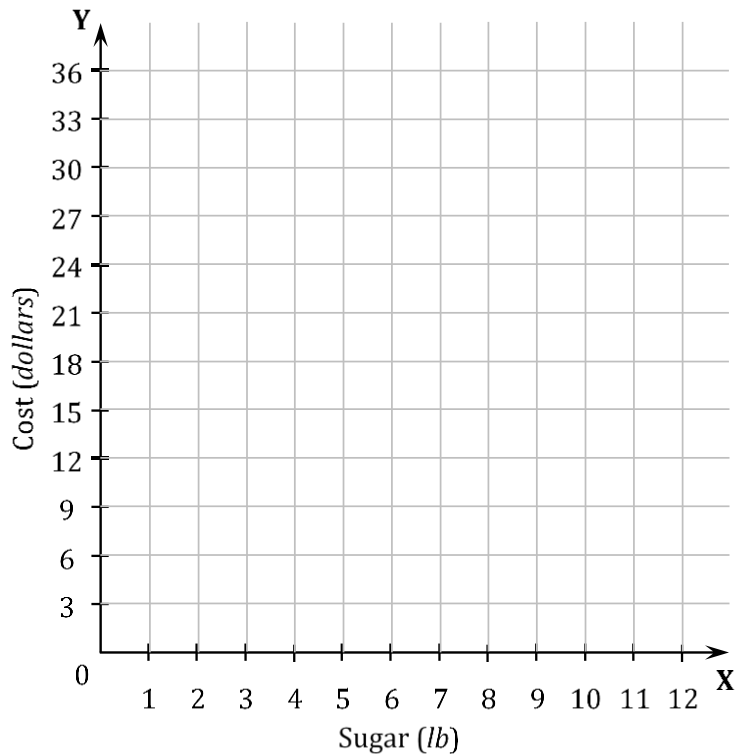
I bought 9 *lb* of butter for \$8. Cost of butter is $\frac{\square}{\square}$

Plotting a graph

If sugar costs three *dollars per pound*, plot a graph showing the relation between pounds and dollars.

Fill in the table below

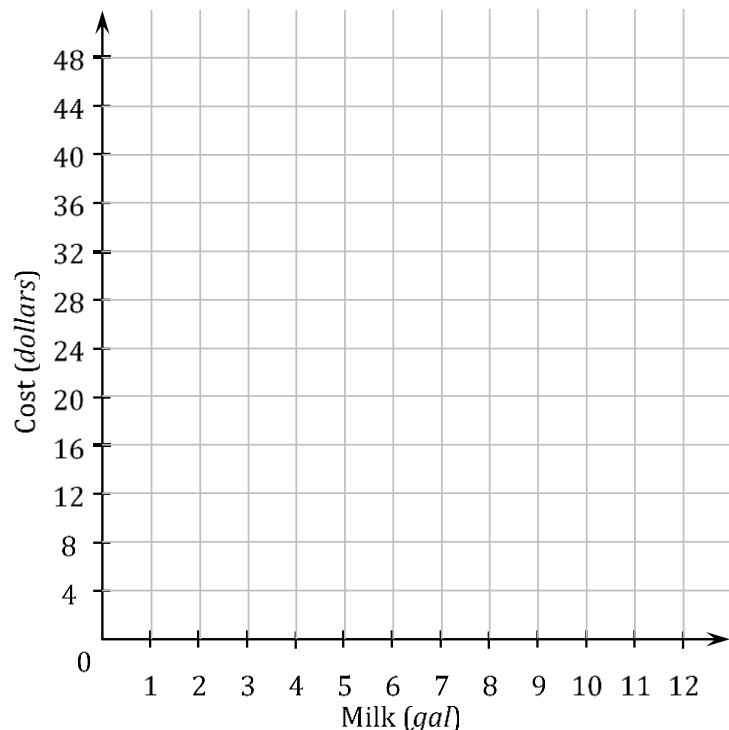
X Axis	Relation	Y axis
<i>pounds</i>	$\frac{\text{dollars}}{\text{pound}}$	<i>dollars</i>
<i>lb</i>	$\frac{\$}{\text{lb}}$	<i>\\$</i>
0	3	0
1	3	3
2	3	6
3	3	.....
4	3	.....



If milk costs four *dollars per gallon*, plot the graph showing the relation between gallons and dollars.

Fill in the table below

X Axis	Relation	Y axis
<i>gallon</i>	$\frac{\text{dollars}}{\text{gallon}}$	<i>dollars</i>
<i>gal</i>	$\frac{\$}{\text{gal}}$	<i>\\$</i>
0	4	.....
1	4	4
2	4	.....
3	4	.....
4	4	.....

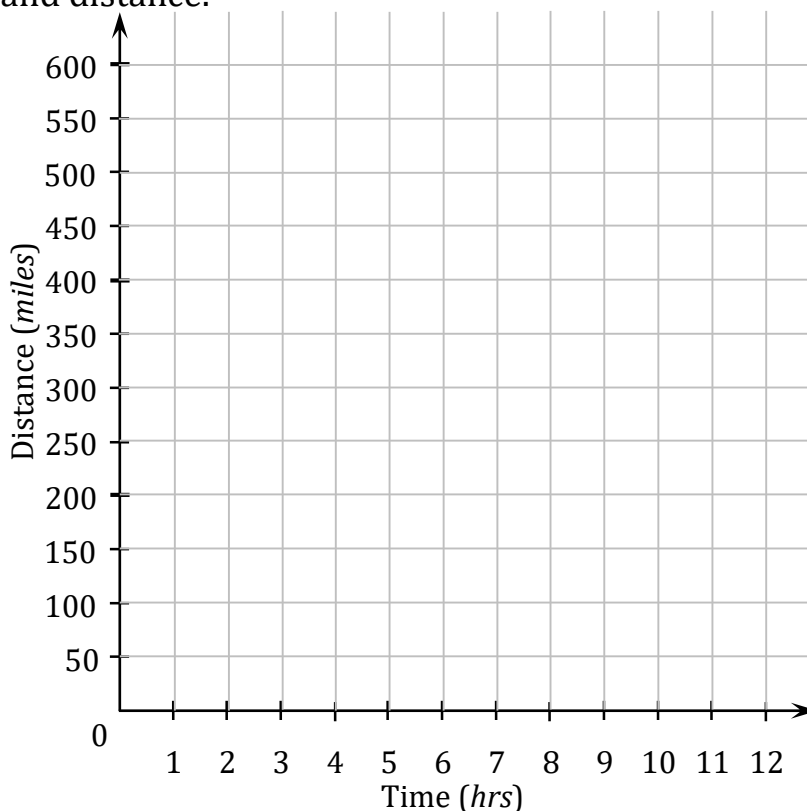


Sample page

If a car is driving at the speed of 50 *miles per hour*, plot the graph showing the relation between time and distance.

Fill in the table below

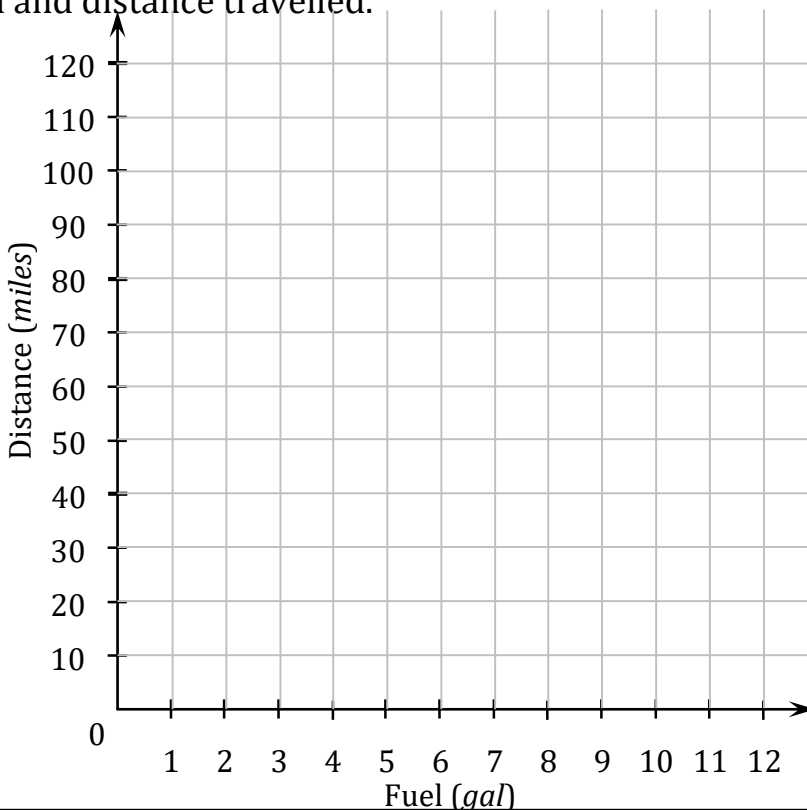
X Axis	Relation	Y axis
<i>hours</i>	$\frac{\text{miles}}{\text{hour}}$	<i>miles</i>
<i>hrs</i>	$\frac{\text{miles}}{\text{hr}}$	<i>miles</i>
0	50	.....
1	50	50
2	50	.....
3	50	.....
4	50	.....



If a car has a mileage of 10 miles/gal, plot the graph showing the relation between fuel consumption and distance travelled.

Fill in the table below

X Axis	Relation	Y axis
<i>gallons</i>	$\frac{\text{miles}}{\text{gallon}}$	<i>miles</i>
<i>gal</i>	$\frac{\text{miles}}{\text{gal}}$	<i>miles</i>
0	10	.....
1	10	10
2	10	.....
3	10	.....
4	10	.....



Exponents

Exponents are a shorthand way of representing repeated multiplications of the same number with itself.

Example: $2 \times 2 \times 2 \times 2 = 2^4$ → read as “two to the power of four”

Write the following multiplications in the exponent format and read aloud the expression as “..... to the power of”.

$3 \times 3 \times 3 \times 3 = 3^4$	$2 \times 2 \times 2 \times 2 \times 2 = \dots\dots\dots$
$4 \times 4 \times 4 = \dots\dots$	$5 \times 5 \times 5 \times 5 = \dots\dots$
$7 \times 7 = \dots\dots$	$8 \times 8 \times 8 \times 8 \times 8 \times 8 = \dots\dots$

Write the following exponents in repeated multiplication format and calculate the answer:

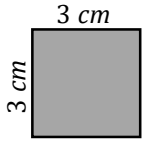
$2^3 = 2 \times 2 \times 2$ $= 4 \times 2$ $= 8$	$3^3 =$ $=$
$2^4 =$	$10^4 =$ $=$
$10^5 =$	$4^2 =$ $=$

Write the following exponents in repeated multiplication format (No need to calculate the answer):

$5^4 =$	$7^5 =$
$8^3 =$	$3^6 =$

Sample page

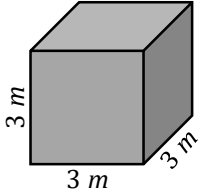
A rectangular figure with equal sides is called square.



Area of a square with sides of 3 *cm* each:

$$\begin{aligned} \text{Area} &= 3 \times 3 = 3^2 \rightarrow \text{read as "three squared"} \\ &= \dots \text{ cm}^2 \rightarrow \text{Units use exponent notation} \end{aligned}$$

A rectangular block with equal sides is called cube.



Volume of a cube with sides of 3 *m* each:

$$\begin{aligned} \text{Volume} &= 3 \times 3 \times 3 = 3^3 \rightarrow \text{read as "three cube"} \\ &= \dots \text{ m}^3 \rightarrow \text{Units use exponent notation} \end{aligned}$$

Write an area or volume with exponent notation with correct units. (No need to calculate the answer)

Square with sides of 8 *cm* each \rightarrow Area = 8^2 cm^2

Cube with sides of 8 *cm* each \rightarrow Volume = 8^3 cm^3

Square with sides of 5 *cm* each \rightarrow Area =

Cube with sides of 5 *cm* each \rightarrow Volume =

Square with sides of 7 *cm* each \rightarrow Area =

Cube with sides of 7 *cm* each \rightarrow Volume =

Square with sides of 12 *cm* each \rightarrow Area =

Cube with sides of 12 *cm* each \rightarrow Volume =

Square with sides of 10 *cm* each \rightarrow Area =

Cube with sides of 10 *cm* each \rightarrow Volume =

Square with sides of 0.9 *cm* each \rightarrow Area =

Cube with sides of 0.9 *cm* each \rightarrow Volume =
