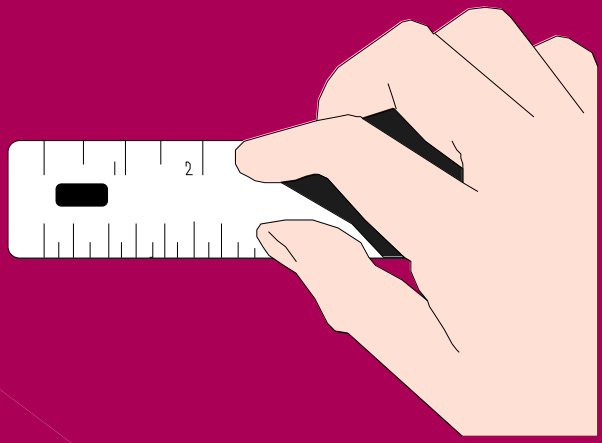
Introduction to Printing Math



Each line = to 1/16”

Every 2 lines = to 1/8”

Every 4 lines = to 1/4”

Every 8 lines = to 1/2”

Every 16 lines = to 1”

Find the fractions which are one larger and one smaller when using a 1/16” scale.

Example:

$\frac{9}{16}$ 5/8” $\frac{11}{16}$

Solve the following problems - instructor will check your work when complete!

____ 3/8” ____	____ 7/8” ____	____ 1/8” ____
	16	16
____ 3/8” ____	____ 1/2” ____	____ 1/4” ____
____ 3/16” ____	____ 7/16” ____	____ 11/16” ____

Finding Half of a Fraction
or
Fraction and Whole Number

Sample 1	**Finding half of a fraction:**	**7/8”**
	a) Top of fraction remains the same.	**7/**
	b) Double bottom of fraction. (2x8)	**7/16”**
Sample 2	**When whole number is even:**	**8 7/8”**
	a) Find half of the whole number.	**4**
	b) Top of fraction remains the same.	**4 7/**
	c) Double bottom of fraction. (2x8)	**4 7/16”**
Sample 3	**When whole number is odd:**	**5 7/8”**
	a) Find half of the whole number and forget the remainder. (1/2)	**2**
	b) Add top and bottom of fraction and write total on top.	**2 15/**
	c) Double bottom of fraction. (2x8)	**2 15/16”**

Solve the following problems - instructor will check your work when complete!

1/4” = ___	4 5/8” = ___	3 1/4” = ___
7/16” = ___	6 1/4” = ___	5 3/8” = ___
5/8” = ___	2 7/8” = ___	7 5/16” = ___
11/16” = ___	8 9/16” = ___	1 1/2” = ___

Printers Point System

6 picas = one inch
12 points = one pica
72 points = one inch

Points are used to size type!

This is 9 pt. or 1/8 of an inch.

This is 18 pt. or 1/4 of an inch.

This is 36 pt. or 1/2 of an inch.

This is 54 pt.

This is 72 pt.

Solve the following problems - instructor will check your work when complete!
Use another sheet of paper if necessary!

Add the following:

234	333	489
456	780	75
233	145	845
+123	+654	+350

Divide the following:

35 ⟌ 49,045

12 ⟌ 3699

125 ⟌ 950,725

235 ⟌ 65,890

Subtract the following:

877	535	4,890	7,983	15,760
- 375	- 178	- 3,756	- 7,345	- 3,675

Multiply the following:

125	500	250	2,550	8,750
x 40	x 150	x 70	x 200	x 100

Working with Fractions

Addition: (always reduce to simplest form)

Example: a. 3/7 + 2/7 = 3 + 2/7 = 5/7

b. 2/6 + 2/6 = 2 + 2/6 = 4/6 = 2/3

c. 3/4 + 2/4 = 3 + 2/4 = 5/4 = 1 1/4

d.
$$\begin{array}{r} 6\ 2/4 \\ +\ 3\ 1/4 \\ \hline 9\ 3/4 \end{array}$$

Subtracting: (find common denominator when necessary)

Example: a.
$$\begin{array}{r} 6\ 4/9 \\ -2\ 1/9 \\ \hline 4\ 3/9 = 4\ 1/3 \end{array}$$

b.
$$\begin{array}{r} 9\ 1/3 = 9\ 4/12 \\ -\ 4\ 1/12 = 4\ 1/12 \\ \hline 5\ 3/12 = 5\ 1/4 \end{array}$$

Working with Fractions

Multiplying: (reduce to simplest form)

Example:

a. 2/3 x 5/7 = (2x5=10 & 3x7=21) = 10/21

b. 1/5 x 2/3 x 1/7 = (1x2x1=2 & 5x3x7=105) = 2/105

c. 2/3 x 5 = 2/3 x 5/1 = (2x5=10 & 3x1=3) = 10/3 = 3 1/3

d. 2/9 x 3/7 = 2/3 x 1/7 = (2x1=2 & 3x7=21) = 2/21

Dividing: (Change improper fraction to a whole number)

Example:

a. $1\frac{3}{4} \div \frac{3}{8} = \frac{1 \times 8}{4 \times 3} = \frac{8}{12} = \frac{4}{6} = \frac{2}{3}$

b. $2\frac{1}{4} \div \frac{1}{3} = \frac{9}{4} \div \frac{1}{3} = \frac{9}{4} \times \frac{3}{1} = \frac{27}{4} = 6\frac{3}{4}$

Complete the following Fraction Problems: Use extra paper if necessary, Keep answers in simplest form. Turn in all paper work!

Adding: a. 2/7 + 1/7 = **b. 9/15 + 7/15 =** **c. 1/16+3/16+5/16=**

d. 4/16 + 2/16 = **e. 4/11+7/11+2/11+3/11=**

Subtracting:

a. 8/9
—2/9

b. 3/4
—1/2

c. 20 1/4
— 9 3/4

d. 16 7/8
— 9 1/2

e. 13 3/5
— 8 1/3

Complete the following Fraction Problems: Use extra paper if necessary
Keep answers in simplest form. Turn in all paper work!

Muliplication:

a. 3/4 x 6 =

b. 1/7 x 2/3 =

c.5/12 x 4/5

d. 5/9 x 2/3 x 1/7 =

e. 8/9 x 1/3 =

Divide:

a. $\frac{7}{9} \div \frac{2}{3} =$

b. $3\frac{1}{2} \div \frac{1}{7} =$

c. $\frac{4}{9} \div \frac{2}{3} =$

Working with Decimals

Adding Examples:

a.	b.	c.
9.050	654.003	8.020
123.300	12.750	.800
+22.345	+00.500	+875.563
154.695	667.253	884.383

Subtracting Examples:

a.	b.	c.
29.600	56.500	375.899
—14.827	—23.085	—156.800
14.773	33.415	219.099

Working with Decimals

Multiplying Examples:

a. $4.23 \times .6 = 2.538$

b. $539 \times .07 = 37.73$

c. $.08 \times .3 = .024$

Dividing Examples:

a. $12.45 \div 3 = 4.15$

$$\begin{array}{r} 4.15 \\ 3\overline{)\,12.45} \\ 12 \\ \hline 04 \\ -3 \\ \hline 15 \\ 15 \\ \hline 0 \end{array}$$

b. $.265 \div 5 = .053$

$$\begin{array}{r} .053 \\ 5\overline{)\,.265} \\ 25 \\ \hline 15 \\ 15 \\ \hline 0 \end{array}$$

c. $5.36 \div .08 = 67.$

$$\begin{array}{r} 67. \\ .08\overline{)\,5.36.} \\ 48 \\ \hline 56 \\ 56 \\ \hline 0 \end{array}$$

Complete the following Problems: Use extra paper if necessary, Keep answers in simplest form. Turn in all paper work!

Adding Decimals:

a. .36
120.005
+135.8

b. 12.005
.67
+89.09

c. 45.06
2.587
+.879

d. 178.004
45.119
+7.333

Subtracting Decimals:

a. 623.89
—598.087

b. 45.67
—8.34

c. 12.089
—8.643

d. .99
—.45

Complete the following Problems: Use extra paper if necessary, Keep answers in simplest form. Turn in all paper work!

Multiplying Decimals:

a. $3.2 \times .06$

b. $56 \times .25$

c. $3.75 \times .50$

d. $45.67 \times .075$

Dividing Decimals:

a. $12\overline{).720}$

b. $24\overline{)9.84}$

c. $.072\overline{)19.904}$

d. $35\overline{)7.98}$

Changing Decimals to Fractions:

Example A: Change .24 to a common fraction.

Step 1 Write 24 as the top number. $\frac{24}{}$

Step 2 Two places means hundredths. Write 100 as the bottom number. $\frac{24}{100}$

Step 3 Reduce the fraction. Both numbers can be divided evenly by 4. $\frac{24 \div 4 = 6}{100 \div 4 = 25}$

Example B: Change 9.015 to a mixed number.

Step 1 Write 9 as the whole number and 15 as the top number of the fraction. $9\ \frac{15}{}$

Step 2 Three places means thousandths. Write 1,000 as the bottom number. $9\ \frac{15}{1000}$

Step 3 Reduce the fraction. Both numbers can be divided by 5. $9\ \frac{15 \div 5}{1000 \div 5} = 9\ \frac{3}{200}$

Changing a Fractions to Decimals:

Example: Change 5/8 to a decimal.

Step 1 Divide the bottom number (8) into the top number (5)

$$8\overline{)5}$$

Step 2 Add a decimal point and zeros. Divide

$$\begin{array}{r} .625 \\ 8\overline{)5.000} \end{array}$$

Complete the following Problems: Use extra paper if necessary, Keep answers in simplest form. Turn in all paper work!

Decimals to Fractions:

a. .08 _____ b. .085 _____ c. 9.86 _____

d. 3.6 _____ e. 7.22 _____ d. 123.462 _____

Fractions to Decimals:

a. 1/4 = _____ b. 3/4 = _____ c. 3/8 _____

d. 2/9 = _____ e. 1/3 = _____ d. 11/16 _____

Changing Decimals to Percents:

To change a decimal to a percent, move the decimal point two (2) plac to the RIGHT and write the percent sign (%). If the point moves to the end of the number it is not necessary to write the point.

Examples: .35 = 35% .8 = 80% .04 = 4% .0008 = .08%

Complete the following:

.09 = _____ .125 = _____ .0375 = _____

.0016 = _____ .9 = _____ .005 = _____

Changing Percents to Decimals:

To change a percent to a decimal, drop the percent sign and move the point two places to the LEFT.

Examples: 6% = .06 30% = .3 150% = 1.5 .9% = .009

Complete the following:

20% = _____ 8% = _____ 3.5% = _____

275% = _____ .075% = _____ .03% = _____