

Summary of fractions, decimals, and percentages. - Fall 2010

	<u>Fraction</u>	<u>Decimal</u>	<u>Percentage</u>	<u>Comments</u>
Examples	$\frac{1}{2} = 50/100$ one half	.5 = .50 5 tenths or 50 hundredths	$50/100 = 50\%$ fifty percent	
	$\frac{1}{4} = 25/100$ one fourth	.25 25 hundredths	25%	A quarter is 25% of a dollar
	$\frac{1}{5} = 20/100$ One fifth	.2 2 tenths	20%	A \$1 bill is 20% of a \$5 bill
	$\frac{1}{10} = 10/100$ one tenth	.1	10%	A dime is 10% of a dollar
	$\frac{1}{20} = 5/100$ one twentieth	.05 five hundredths	5%	A nickel is 5% of a dollar
	$\frac{1}{100}$.01 one hundredth	1%	A penny is 1% of a dollar
Add	$\frac{3}{4} + \frac{1}{2} = \frac{3}{4} + \frac{2}{4} = \frac{5}{4}$	$.75 + .50 = 1.25$		
Subtract	$\frac{3}{4} - \frac{1}{2} = \frac{3}{4} - \frac{2}{4} = \frac{1}{4}$	$.75 - .50 = .25$		
Multiply	$\frac{3}{4} \times \frac{1}{2} = \frac{3}{8}$	$.75 \times .5 = .375$		
Divide	$\frac{3}{4} \div \frac{1}{2} =$ $\frac{3}{4} \times \frac{2}{1} = \frac{3}{2}$	$.75 \div .5 = 1.5$		
Multiple operations	$2\frac{3}{4} - 3\frac{1}{2} + 6\frac{1}{4} =$ $9 - 3\frac{1}{2} = 5\frac{1}{2}$	$2.75 - 3.5 + 6.25 =$ $9.00 - 3.50 = 5.5$		
Exponent	$(\frac{3}{4})^2 = 9/16$	$(.75)^2 = .5625$		
Reminder:	$x + 0 = x$ $x - 0 = x$ $x \cdot 0 = 0$ $x \cdot 1 = x$ $0 \div x = 0$ $x \div x = 1$			
Restaurant tips	Meal tax is now 6.25%. If you double the tax amount on the bill, your tip will be just 12.5%. If you triple the tax amount on the bill, you'll leave a very generous almost 19% tip.			

Math Humor:

A store owner said, "I lose one percent on each *widgit* I sell. Fortunately, it's a popular item so I make it up in volume." Could the store survive by selling only widgets?

Reminders

Add, subtract 0	$x + 0 = x$ $x - 0 = x$	$3 + 0 = 3$ $3 - 0 = 3$
Multiply, divide with 0 or 1 (can't divide by 0)	$0(x) = 0$ and $(x)(1) = x$ $0 \div x = 0$ and $x \div 1 = x$	$0(3) = 0$ and $(3)(1) = 3$ $0 \div 3 = 0$ and $3 \div 1 = 3$ $3 \div 0$ is undefined
Value unchanged if multiply or divide numerator and denominator by same number.	$a/b = \frac{a}{b} = \frac{a(n)}{b(n)}$ $a/b = \frac{a}{b} = \frac{a \div n}{b \div n}$	$2/3 = \frac{2}{3} = \frac{2(4)}{3(4)} = \frac{8}{12}$ $8/12 = \frac{8}{12} = \frac{8 \div 4}{12 \div 4} = \frac{2}{3}$
Exponents	$x \text{ squared} = x^2$ $x^5 = \text{xxxxx (multiplied)}$ $(a/b)^2$	$3^2 = 9$ $2^5 = (2)(2)(2)(2)(2) = 32$ $(2/3)^2 = (2)(2) \div (3)(3) = 4/9$