Percents

Percent means per hundred

$$7\% = \frac{7}{100}$$

To write a decimal as a percent:

a. Multiply by 100%
b. Move the decimal points 2 places to the right and add the percent sign.

$$.25 = .25 \times 100\% = 25\%$$

To write a percent as a decimal:

a. Replace the percent sign by 1/100 and multiply
b. Move the decimal point 2 places to the left and drop the percent sign.

$$35\% = 35 \times \frac{1}{100} = \frac{35}{100} = .35$$

To write a fraction as a percent:

a. Multiply the fraction by 100% and simplify.
b. Convert the fraction to a decimal, and then move the decimal point 2 places to the right and add the percent sign.

$$\frac{1}{5} = \frac{1}{5} \times 100\% = \frac{100}{5}\% = 20\%$$

or $\frac{1}{5} = .20 = 20\%$

To write a percent as a fraction:

a. Replace the % symbol with 1/100, and then multiply. Simplify if possible.

$$7\% = 7 \times \frac{1}{100} = \frac{7}{100}$$

Percent Equation: $Amount = percent * base$

Percent proportion:

$$\frac{amount}{base} = \frac{percent}{100}$$

FRACTION	DECIMAL	PERCENT
I/4		
	.7	
		67%
4/10		
	.13	
		50%
2/3		
	1.9	
		100%
1		
	.0083	
		203%
2 ¼		
	000.0000006	
		45 ½ %
4/2		
	.33	
		0%
7/3		

1. *Percent Formula:*
   a. amount = percent × base

2. *Sales Tax and Total Price:*
   a. sales tax = tax rate × purchase price
      (amount = percent × base)
   b. total price = purchase price + sales tax

3. *Commission:*
   a. commission = commission rate × sales amount
      (amount = percent × base)

4. *Percent Increase (or Decrease):*
   a. percent increase (or decrease) = $\frac{\text{amount of increase (or decrease)}}{\text{original amount}}$

5. *Discount and Sales Price:*
   a. amount of discount = discount rate × original price
      (amount = percent × base)
   b. sale price = original price – amount of discount

6. *Interest:*
   a. Simple Interest
      i. simple interest = principal × rate × time
         (rate is annual rate and time is in years)
      ii. total amount = principal + interest
   b. Compound Interest
      i. total amount = principal × compound interest factor
         or
         $A = P\left(1 + {}^{r}/_{n}\right)^{nt}$ where P is the principal, r is the annual interest rate expressed as a decimal, t is the length of time in years, and n is the number of compounding in one year.
      ii. compound interest = total amount – principal
   c. Monthly Payment
      i. monthly payment = $\frac{\text{total amount}}{\text{total number of payments}}$

PART	WHOLE	FRACTION	DECIMAL	PERCENT
NY	All states			
3 eggs	2 doz.			
4 through 8	All one digit #s			
12 in.	1 ft.			
3 apples	1 apple			
7 cents	1 dime			
1 dime	7 cents			
one side of a square	perimeter of the same square			
π	100			
A group of 30 people	A group of 9 people			
3x	3x			
1/3 apple	1 apple			
1/3 z	z			
z	1/2 z			
1/5 yard	3 yards			
67 cm.	2 m			
40 min.	1 hour			
2 hours	20 min.			
5 %	3			
.7	1/2			
30.000	250 %			
female students	# of students in this room			
3 seconds	2.5 hours			
1 of 25 equal parts of 1000				
A numerator of 5 and A denominator of 15				