

**Study Guide for  
Reteaching and Practice**

by Kay Thompson

# ***Algebra*** ***and Trigonometry***

***Structure and Method***

***Book 2***

***Brown  
Dolciani  
Sorgenfrey  
Kane***

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# Symbols

		Page			Page
$\{ \}$	set	1	$f^{-1}$	inverse function of $f$	159
$\in$	is an element of		$\log_b N$	logarithm base $b$ of $N$	161
$=$	equals or is equal to	1	$\ln x$	natural logarithm of $x$ or logarithm base $e$ of $x$	169
$>$	is greater than	1	$t_n$	$n$ th term of a sequence	171
$<$	is less than	1	$\Sigma$	summation sign	177
$ a $	absolute value of $a$	1	$\infty$	infinity	177
$-a$	additive inverse of $a$ or opposite of $a$	1	$S_n$	sum of the first $n$ terms of a series	179
$\stackrel{?}{=}$	is equal to?	13	$!$	factorial	185
$\neq$	does not equal	13	$^\circ$	degree	187
$\therefore$	therefore	13	$'$	minute	187
$\emptyset$	empty set or null set	13	$"$	second	187
$\geq$	is greater than or equal to	21	$\overrightarrow{AB}$	vector $AB$	223
$\leq$	is less than or equal to	21	$\ \mathbf{v}\ $	norm of vector $\mathbf{v}$	223
$a < x < b$	$x$ is greater than $a$ and less than $b$ or $x$ is between $a$ and $b$	21	$\cos^{-1}$	inverse cosine or Arc cosine	233
$P(a, b)$	point $P$ with coordinates $(a, b)$	35	$\sigma$	standard deviation	241
$x_1$	$x$ sub 1	37	$r$	correlation coefficient	245
$f(x)$	$f$ of $x$ or the value of $f$ at $x$	47	${}_nP_r$	number of permutations of $n$ elements taken $r$ at a time	249
$a^n$	$n$ th power of $a$	55	${}_nC_r$	number of combinations of $n$ elements taken $r$ at a time	251
$\approx$	is approximately equal to	75	$P(E)$	probability of event $E$	255
$\pm$	plus-or-minus sign	89	$\cap$	intersection	257
$\sqrt[n]{b}$	$n$ th root of $b$	89	$\cup$	union	257
$i$	imaginary unit ( $i^2 = -1$ )	101	$\bar{A}$	complement of event $A$	257
$b^{1/n}$	$n$ th root of $b$	155	$A_{m \times n}$	matrix $A$ with $m$ rows and $n$ columns	259
$b^{p/q}$	$q$ th root of the $p$ th power of $b$	155	$\det A$	determinant of matrix $A$	267
			$A^{-1}$	inverse of matrix $A$	269

Greek letters:  $\alpha, \beta, \gamma, \theta, \pi, \sigma, \phi, \omega$  alpha, beta, gamma, theta, pi, sigma, phi, omega



# Table of Measures

## Metric Units

Length	10 millimeters (mm) = 1 centimeter (cm)
	$\left. \begin{array}{l} 100 \text{ centimeters} \\ 1000 \text{ millimeters} \end{array} \right\} = 1 \text{ meter (m)}$
	1000 meters = 1 kilometer (km)
Area	100 square millimeters (mm <sup>2</sup> ) = 1 square centimeter (cm <sup>2</sup> )
	10,000 square centimeters = 1 square meter (m <sup>2</sup> )
Volume	1000 cubic millimeters (mm <sup>3</sup> ) = 1 cubic centimeter (cm <sup>3</sup> )
	1,000,000 cubic centimeters = 1 cubic meter (m <sup>3</sup> )
Liquid Capacity	1000 milliliters (mL) = 1 liter (L)
	1000 cubic centimeters = 1 liter
Mass	1000 milligrams (mg) = 1 gram (g)
	1000 grams = 1 kilogram (kg)
Temperature in degrees Celsius (°C)	0°C = freezing point of water
	100°C = boiling point of water

## United States Customary Units

Length	12 inches (in.) = 1 foot (ft)
	$\left. \begin{array}{l} 36 \text{ inches} \\ 3 \text{ feet} \end{array} \right\} = 1 \text{ yard (yd)}$
	$\left. \begin{array}{l} 5280 \text{ feet} \\ 1760 \text{ yards} \end{array} \right\} = 1 \text{ mile (mi)}$
Area	144 square inches (in. <sup>2</sup> ) = 1 square foot (ft <sup>2</sup> )
	9 square feet = 1 square yard (yd <sup>2</sup> )
Volume	1728 cubic inches (in. <sup>3</sup> ) = 1 cubic foot (ft <sup>3</sup> )
	27 cubic feet = 1 cubic yard (yd <sup>3</sup> )
Liquid Capacity	16 fluid ounces (fl oz) = 1 pint (pt)
	2 pints = 1 quard (qt)
	4 quarts = 1 gallon (gal)
Weight	16 ounces (oz) = 1 pound (lb)
Temperature in degrees Fahrenheit (°F)	32°F = freezing point of water
	212°F = boiling point of water

## Time

60 seconds (s) = 1 minute (min)
60 minutes = 1 hour (h)