RIDE Rhode Island Department of Education

RICAS Grade 8
Approved Supplemental Mathematics Reference Sheet*

General Problem Solving Strategies

- Reread question for clarity
- Draw a picture
- Make a table
- Circle or highlight key terms
- Calculate and solve
- See if my answer makes sense
- Circle my answer

Order of Operations

PEMDAS

1. **P**arentheses (brackets, etc.)
2. **E**xponents
3. **M**ultiplication or **D**ivision (left to right)
4. **A**ddition or **S**ubtraction (left to right)

Symbols

$>$ is greater than
$<$ is less than
$=$ is equal to
$\leq$ is less than or equal to
$\geq$ is greater than or equal to
$|x|$=absolute value of x

Divisibility Rules

2	If the last digit is even
3	If the sum of the digits can be divided by 3
5	If the last digit is 0 or 5
6	If the number is divisible by both 2 and 3
9	If the sum of the digits can be divided by 9
10	If the last digit is 0

Fractions

- $\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$
- $\frac{a}{b} - \frac{c}{d} = \frac{ad - bc}{bd}$
- $\frac{a}{b} \bullet \frac{c}{d} = \frac{ac}{bd}$
- $\frac{a}{b} \div \frac{c}{d} = \frac{ad}{bc}$

Properties

- $a(b + c) = ab + ac$
- $a + (b + c) = (a + b) + c$
- $a \bullet (b \bullet c) = (a \bullet b) \bullet c$
- $a \bullet b = b \bullet a$
- $a + b = b + a$
- $a - (-b) = a + b$
- $a + (-b) = a - b$

Statistics

- me**A**n-Average
- **MO**de-Most Often
- me**DI**an-Middle
- **R**ang**E-** Least to Greatest

Probability

$$P = \frac{favorable\ outcomes}{possible\ outcomes}$$

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Place Value

Whole Numbers							Decimals	
Hundred-thousands	Ten-thousands	Thousands	Hundreds	Tens	Ones	.	Tenths	Hundredths

Transformations

- ro**T**ation -Turn
- re**FL**ection -Flip
- tran**SL**ation-Slide

Percentages and Proportions

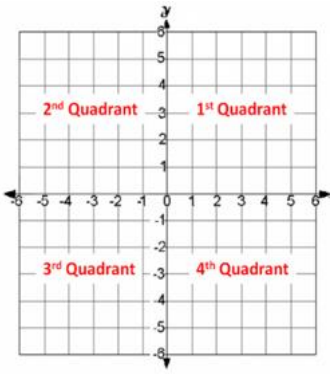
- $\frac{is}{of} = \frac{\%}{100}$
- $x\% = \frac{x}{100}$
- $\frac{a}{b} = \frac{c}{d}$ *then* $ad = bc$

Hundreds Chart

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Coordinate Plane

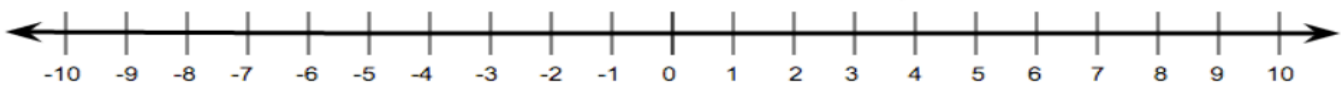
- $Ax + By = C$
- Slope or Rate of Change $(m) = \frac{y_2 - y_1}{x_2 - x_1} = \frac{Rise}{Run}$
- $y = mx + b$
- $y - y_1 = m(x - x_1)$



Geometry and Measurement

- l = length
- w = width
- h = height
- s = length of a side
- b = length of the base
- d = diameter
- A = area
- B = area of the base
- P = perimeter
- C = circumference
- r = radius

Number Line



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Multiplication Table (Do NOT complete this table for the student.)

X	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

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