**Approved Supplemental Mathematics Reference Sheet**

**Grade 8**

 (For use by students on the MCAS Mathematics test who have this accommodation)

|  |  |
| --- | --- |
| **General Problem Solving Strategies** | **Symbols** |
| * 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
 | $>$ is greater than $<$ is less than$=$ is equal to≤ is less than or equal to≥ is greater than or equal to|absolute value| |
| **Place Value** | **Divisibility Rules** |
|

|  |  |  |
| --- | --- | --- |
| Whole Numbers |  | Decimals |
| Ht | Tt | Th | H | T | O | . | T | H | Th |
|  |  |  |  |  |  |  |  |  |  |

 |

|  |  |
| --- | --- |
| 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 |

 |
| **Probability** | **Properties** |
| $$P=\frac{favorable outcomes}{possible outcomes}$$ | * $a\left(b+c\right)=ab+ac$
* $a+\left(b+c\right)=\left(a+b\right)+ c$
* $a ⦁\left(b⦁c\right)=\left(a⦁b\right)⦁ c$
* $a ⦁ b=b ⦁ a$
* $a+b=b+a $
 |
| **Statistics** | **Fractions** |
| * me**A**n
* **MO**de
* me**DI**an
* **R**ang**E**
 | * $\frac{a}{b}+\frac{c}{d}=\frac{ad+bc}{bd}$
* $\frac{a}{b}-\frac{c}{d}=\frac{ad-bc}{bd}$
* $\frac{a}{b}⦁\frac{c}{d}=\frac{ac}{bd}$
* $\frac{a}{b}÷\frac{c}{d}=\frac{ad}{bc}$
 |

|  |  |
| --- | --- |
| **Devices and Operations** | **Percentages and Proportions** |
| * PEMDAS
* Same sign – sum
* Different sign – difference
 | * $\frac{is}{of}=\frac{\%}{100}$
* $\frac{a}{b}= \frac{c}{d} then ad=bc$

  |
| **Hundreds Chart** | **Coordinate Plane** |
|

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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 |

 | * $Ax+By=C$

*y**x*IIIIVIII* $m=\frac{y\_{2}-y\_{1}}{x\_{2}-x\_{1}}$ or $\frac{Rise}{Run}$
* $y=mx+b$
* $y-y \_{1}= m(x-x\_{1})$
 |
| **Transformations** | **Number Line** |
| * ro**T**ation
* re**FL**ection
* tran**SL**ation
 | Number line |

|  |
| --- |
| **Multiplication Table** |
|

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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 |  |  |  |  |  |  |  |  |  |  |  |  |

 |