**MCAS Grade 8**

**Approved Supplemental Mathematics Reference Sheet**

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

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| --- | --- |
| **General problem-solving strategies** | **Symbols** |
| * Reread question for clarity * Circle or highlight key terms * Calculate and solve * Circle my answer * See if my answer makes sense | * is greater than * is less than * is equal to * |absolute value| * ≤ is less than or equal to * ≥ is greater than or equal to |
| **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 | |
| **Volume (*V*  ) Formulas** | **Area (*A* ) Formulas** |
| Cube...  ()  Sphere...  ()  Cone…  Right Circular Cylinder…  Right prism…  () | Square…  ( = length of a side)  Rectangle...  ()  OR    )  Circle…  Parallelogram...  Triangle...  Trapezoid... |
| **Circle Formulas** |
| Area....  ()  Circumference…  OR |

|  |  |
| --- | --- |
| **Pythagorean Theorem** | **Total Surface Area (*SA* ) Formulas** |
|  | Right Rectangular Prism…    ()  Right Circular Cylinder…    Sphere… |
| **Devices and Operations** | **Percentages and Proportions** |
| * PEMDAS * Same sign – sum * Different sign - difference |  |
| **Transformations** | **Coordinate Plane**  *y* |
| * ro**T**ation * re**FL**ection * tran**SL**ation | *x*  II  I  IV  III |
| **Statistics** | **Probability** |
| * me**A**n * **MO**de * me**DI**an * **R**ang**E** |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Properties** | | **Fractions** | |
|  | |  | |
| **Number Table** | | **Number Line** | |
| |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 0 | 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 | | | Number line | |
| **Conversions** | | | |
| 1 cup = 8 fluid ounces  1 pint = 2 cups  1 quart = 2 pints  1 gallon = 4 quarts  1 gallon ≈ 3.785 liters  1 liter ≈ 0.264 gallon  1 liter = 1000 cubic centimeters | 1 inch = 2.54 centimeters  1 meter ≈ 39.37 inches  1 mile = 5280 feet  1 mile = 1760 yards  1 mile ≈ 1.609 kilometers  1 kilometer ≈ 0.62 mile | | 1 pound = 16 ounces  1 pound ≈ 0.454 kilogram  1 kilogram ≈ 2.2 pounds  1 ton = 2000 pounds |