



Geometry

On these slides are the most commonly used Nemeth symbols in Geometry.



Grouping Symbols Review

■ Parentheses

()



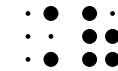
■ Brackets

[]



■ Braces

{ }



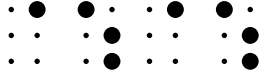

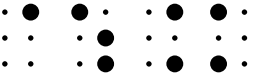
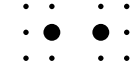
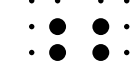
Signs of Comparison Review

Space Before and After

- Equal to = ⠠⠠⠠⠠
- Not equal to ≠ ⠠⠠⠠⠠⠠
- Less than < ⠠⠠
- Less than or equal to ≤ ⠠⠠⠠⠠
- Greater than > ⠠⠠
- Greater than or equal to ≥ ⠠⠠⠠⠠

Other Comparisons

Space Before and After

- Approximately equal to \approx 
- Similar to \sim 
- Congruent to \cong 
- Ratio $:$ 
- Proportion $::$ 



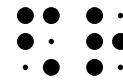
Basic Shapes

■ Shape Indicator

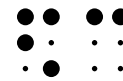
■ Rectangle (r)



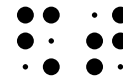
■ Circle (c)



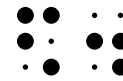
■ Triangle (t)



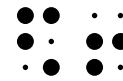
■ Square (4)



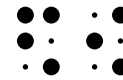
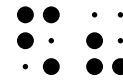
■ Hexagon (6)



■ Octagon (8)



■ Angle



Spacing with Symbols of Shape

- There must be a space between the shape symbol and its identification

△ABC ⠠⠠⠠ ⠠⠠⠠⠠⠠⠠⠠

- The combination of a sign of shape and its identification is considered one item in and “enclosed list”

Single vs. Double Capital Letter Indicators

■ Single Capital

■ ∠ABC

⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠

■ Δ DEF

⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠

■ rectangle JKLM

⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠

■ Double Capital

■ SAS ⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠

■ SSS ⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠

■ ASA ⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠

■ AAS ⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠

■ HL ⠠⠠⠠⠠⠠⠠⠠⠠

Shapes that are signs of comparison

- Must have a space before and after
 - Parallel to - || (l) ⠠⠠⠠⠠
 - Not parallel to ⠠⠠⠠⠠
 - Perpendicular to - \perp (p) ⠠⠠⠠⠠
 - Not perpendicular to ⠠⠠⠠⠠



Definition of Terms

3 Level Indicators

- The normal level of writing is called the “base line”

dot 5 ∴

- Superscript – above baseline, raised

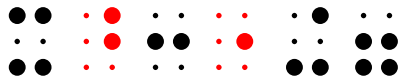
dot 4-5 ∴

- Subscript – below baseline, lowered

dot 5-6 ∴

Examples

■ $x^3 + 7$



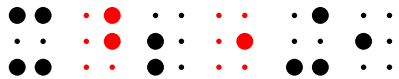
■ y_f



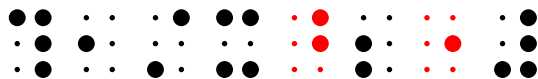
■ x^{-5}



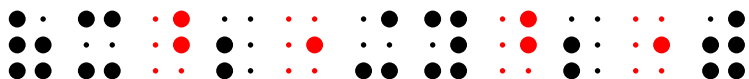
■ $x^2 + 1$



■ $\frac{1}{x^2}$



■ $(x^2 + y^2)$





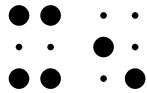
Numeric Subscripts

- Do not use a subscript indicator if the subscript
 - Is Numeric
 - Is First Order
 - Is associated with an abbreviated function name or a letter which has a separate identity
 - Doesn't have its own subscript or superscript
- Note: A prime (') is not considered a superscript

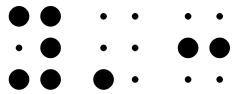


Examples

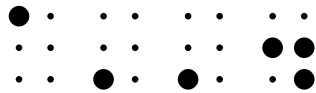
■ X_5



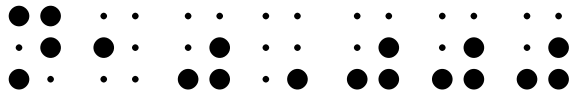
■ y'_3



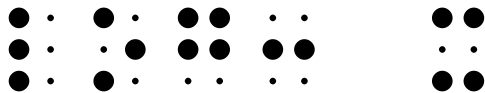
■ a''_4



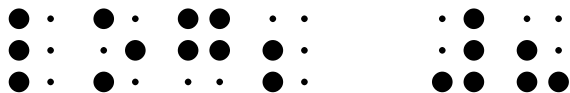
■ $n_{10,000}$



■ $\log_3 X$



■ $\log_2 8$



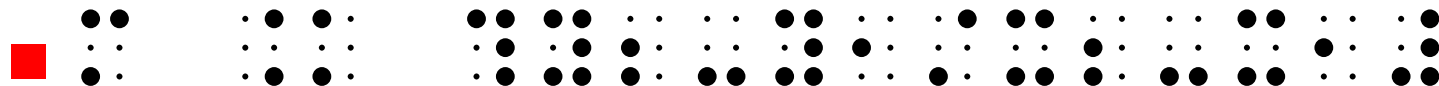
Numeric Subscripts and the Base Line Indicator

- The baseline indicator is not needed after a numeric subscript

- $(x_2 - x_1)^2 + (y_2 - y_1)^2$



- $m = \frac{y_2 - y_1}{x_2 - x_1}$



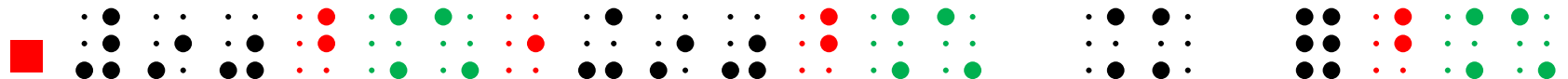


Degree Symbol

- The small hollow dot used in print as the sign for “degrees” is a superscript.

- Hollow Dot ∴ ∴

- $90^\circ + 90^\circ = ?^\circ$




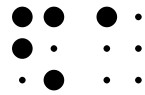

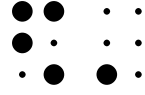






Modifiers

- Definition
 - A superscript or subscript placed directly over or directly under a mathematical expression
- Commonly Used Symbols
 - Arcs, Arrows, Bars, Dots, Tildes, etc



Arcs and Bars

- Arc Concave Upward  
- Arc Concave Downward  
- Horizontal Bar (wh)  
- Vertical Bar  



Dots, Tilde, and Delta

■ Dot



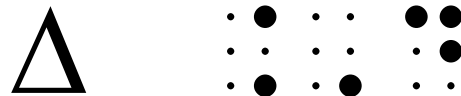
■ Hollow Dot



■ Tilde


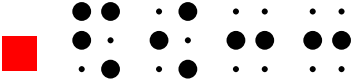
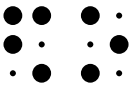
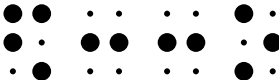


■ Delta





Arrows

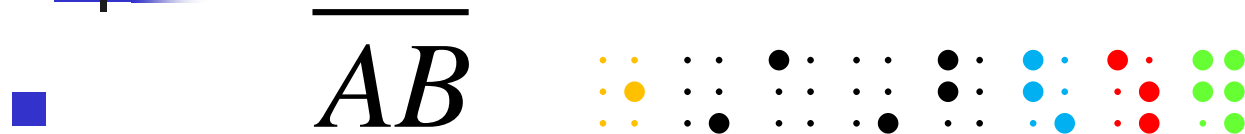
- Barbed at both ends \leftrightarrow
 - 
- Barbed at the left \leftarrow
 - 
- Barbed at the right \rightarrow
 - Contracted 
 - Uncontracted 



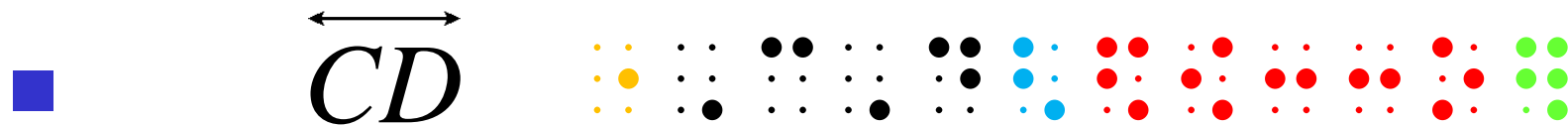
Modified Expressions

- Five Step Rule – in order
(never separate parts)
 - The multipurpose indicator ∴
 - Expression being modified
 - Directly over ∴ (gh like high) or
under ∴ (sh like shallow) indicator
 - Modifier
 - Termination indicator (er) ∴

Examples



multipurpose indicator, AB, directly over, horizontal bar, termination



multipurpose indicator, CD, directly over, line, termination



multipurpose indicator, EF, directly over, arc, termination





Greek Letter Indicator (p. 36)

- English, German, Greek, Hebrew, Russian
- Greek letter indicator
 - dots 4-6 ∴
- How can you tell whether it is a Greek letter indicator or a decimal?
- We will only consider English and Greek






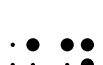



Examples - Greek

■ Uppercase

- Delta Δ 
- Sigma Σ 

■ Lowercase

- Alpha α 
- Beta β 
- Delta δ 
- Epsilon ϵ 
- Gamma γ 
- Theta θ 
- Mu μ 
- Pi π 