Distinguish, differentiate, compare and explain what is the difference between Machining and Grinding. Comparison and Differences.

Differences between Machining and Grinding

S.No.	Machining	Grinding
1	Bulk material removal process (high MRR).	Surface finishing process (low MRR).
2	Achievable surface finish is below 10 micrometer.	Improved finish can be obtained between 0.5 to 2 micrometer
3	Poor accuracy and tolerance is offered.	High accuracy and tolerance is achievable.
4	Cutting tool is made of metallic (carbon steel, HSS, etc.) as well as non-metallic materials (cBN, diamond, ceramics, etc.).	Grinding wheel is made of abrasives like alumina, silica, diamond, cBN, etc., which are bonded in a suitable medium (like resin).
5	Cutting tool has pre-defined geometry.	Abrasives has random geometry.
6	Rake angle usually varies from -15° to +15°.	Rake angle may vary from -75° to +75°.
7	Usually each main cutting edge of the tool actively and equally participates in material removal action.	Only few (about 1%) abrasive grits actually engage in material removal action (shearing). Many dont even tough the workpiece.
8	Specific energy consumption is lower.	Specific energy consumption is high.