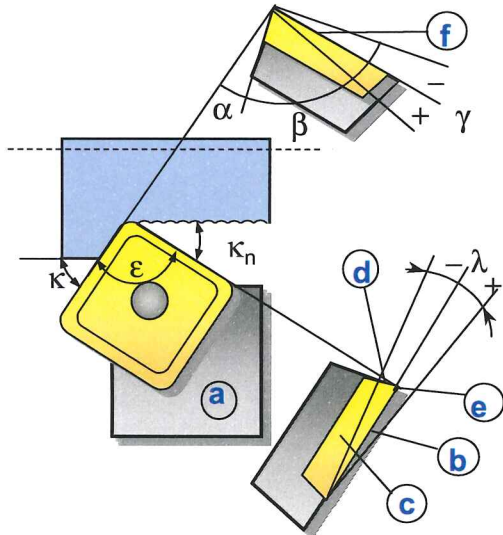


**MEC-E7002 Manufacturing methods I**  
**6.4.2018**

Answer shortly, use clear and readable fonts.

1. Name a) rake angle, b) clearance (or relief) angle, c) inclination angle. Explain the purpose and effect of each to the cutting (chip removal and result).



2. Explain the cutting speed – tool life relationship. (Taylor's formula). How is the economical cutting speed determined? Which factors affect it and how?

3. Shortly describe the following:

- lapping
- honing
- centerless grinding
- broaching
- circular grinding

4. Which are the purposes of cutting fluids? 1) \_\_\_\_\_, 2) \_\_\_\_\_, 3) \_\_\_\_\_, 4) \_\_\_\_\_.

5. Describe shortly which materials (aluminium, construction steel, stainless steel) and material thicknesses (in millimetres) are suitable for cutting with the following methods/machines:

- Plasma cutting
- Turret punch press
- Laser cutting
- Water jet cutting
- Flame cutting