References : [Pierce] : R. S. Pierce "Associative Algebras", GTM88
[G-W] : K.-R. Goodearl, R.B. Warfield "Introduction to noncommutative Noetherian rings", CUP
[McR] : McConnell - Robson "Noncommutative Noetherian rings", AMS

① Quaternions : Hamilton : $A = K \oplus Ki \oplus Kj \oplus Kk$ with mult $i^2 = -1$, $j^2 = -1$, $ij = -ji = k$
§1.6 in [Pierce] : general quaternions
- Lemma : $\left(\frac{a, b}{F}\right)$ is simple with center F $\Leftrightarrow$ $a \neq 0, b \neq 0$
- Prop : div. alg.

§1.7 in [Pierce] : Isomorphisms of quaternion algebras

② Group algebras (see lecture) [G-W, xvi]
$\downarrow$ first part
- Representations
- Basics [Pierce 1.2] : Def, Prop about ext. of morphisms
- Connections to skew Laurent rings ?
- [Mc-R] : p22 : Generalizations
- Semi-simplicity
- Decomposition : [Serre p48], Center [Serre]

③ Rings of diff. operators xvii in [G-W]
- Def $\rightsquigarrow$ p 26 more detail [G-W]
- Weyl algebra p. 30
  in part Cor 2.2 : all Weyl algebras are simple rings

④ Triangular matrix rings [GW p4] $\rightarrow$ Whole section
$\rightsquigarrow$ From examples : When noetherian ?

(5) Skew polynomial rings
[G-W] p 9 : Universal property
• Quantized coordin. ring of k^2
• Simplicity p. 20

(5') Skew Laurent rings
[G-W] p. 15 + 20 +

((6) Universal enveloping algebra
[G-W] xix , Chn 14 of [McC-R] : Basics)

(7) Clifford algebras
→ see [Buchweitz-Faber-Ingalls: Magic Square of reflections and rotations] arXiv: 1806.04600
Section 8 + References (need tensor algebra for the definition)
↳ examples of real Clifford algebras

(8) TL-algebras : Survey by [Doty-Giaccinto : Origins of the Temperley-Lieb algebra: Early history] arXiv 2307.11929