Pensieve header: HW6 Support Notebook.

Q1

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In[•]:= {ŷ = ((0 0), (ϵ 0)), b̂ = ((0 0), (0 -ϵ)), â = ((1 0), (0 0)), x̂ = ((0 1), (0 0))};
        {â.x̂ - x̂.â == x̂, â.ŷ - ŷ.â == -ŷ, b̂.ŷ - ŷ.b̂ == -ϵ ŷ, b̂.x̂ - x̂.b̂ == ϵ x̂, x̂.ŷ - ŷ.x̂ == b̂ + ϵ â}
Out[•]= {True, True, True, True, True}

In[•]:= {ŷ = ((0 0), (1 0)), b̂ = ((1 0), (0 0)), â = ((0 0), (0 -ϵ^-1)), x̂ = ((0 1), (0 0))};
        Simplify@{â.x̂ - x̂.â == x̂, â.ŷ - ŷ.â == -ŷ, b̂.ŷ - ŷ.b̂ == -ϵ ŷ, b̂.x̂ - x̂.b̂ == ϵ x̂, x̂.ŷ - ŷ.x̂ == b̂ + ϵ â}
Out[•]= {{{0, 1/ϵ}, {0, 0}} == {{0, 1}, {0, 0}}, {{0, 0}, {-1/ϵ, 0}} == {{0, 0}, {-1, 0}},
         {{0, 0}, {-1 + ϵ, 0}} == {{0, 0}, {0, 0}}, {{0, 1}, {0, 0}} == {{0, ϵ}, {0, 0}}, True}

In[•]:= {ŷ = ((0 0), (ϵ^1/2 0)), b̂ = (((1+ϵ)/2 0), (0 (1-ϵ)/2)), â = (((1-ϵ^-1)/2 0), (0 (-1-ϵ^-1)/2)), x̂ = ((0 ϵ^1/2), (0 0))};
        Simplify@{â.x̂ - x̂.â == x̂, â.ŷ - ŷ.â == -ŷ, b̂.ŷ - ŷ.b̂ == -ϵ ŷ, b̂.x̂ - x̂.b̂ == ϵ x̂, x̂.ŷ - ŷ.x̂ == b̂ + ϵ â}
Out[•]= {True, True, True, True, True}
```