```
coprime_bezout_id0  THM

⊢  ∀a,b:ℤ. CoPrime(a,b) ⇒ (∃x,y:ℤ. (a·x+b·y) ∼ 1)
| by RepD THEN (Unfold ‘coprime‘ -1)
|    THEN
|    (Inst Thm* ∀a,b:ℤ. ∃u,v:ℤ. GCD(a;b;u·a+v·b)    {bezout_ident}
|     [b;a])
|    THEN
|    ExRepD
|
1. a : ℤ
2. b : ℤ
3. GCD(a;b;1)
4. u : ℤ
5. v : ℤ
6. GCD(b;a;u·b+v·a)
⊢  ∃x,y:ℤ. (a·x+b·y) ∼ 1
| by FwdThru Thm* ∀a,b,y:ℤ. GCD(a;b;y) ⇒ GCD(b;a;y)    {gcd_p_sym}
|    [3]
|
7. GCD(b;a;1)
⊢  ∃x,y:ℤ. (a·x+b·y) ∼ 1
| by FwdThru
|    Thm* ∀a,b,y1,y2:ℤ. GCD(a;b;y1) ⇒ GCD(a;b;y2) ⇒ (y1 ∼ y2)
|    {gcd_unique}
|    [6;7]
|
8. (u·b+v·a) ∼ 1
⊢  ∃x,y:ℤ. (a·x+b·y) ∼ 1  by InstConcl [v;u]
|
⊢  (a·v+b·u) ∼ 1  by OnMCls [-1;0] (λi.Try (ArithSimp i))
END
```