> $with(\ combinat)$

[Chi, *bell*, binomial, *cartprod, character, choose, composition, conjpart, decodepart,* **(1)**
    encodepart, eulerian1, eulerian2, fibonacci, firstcomb, firstpart, firstperm, graycode,
    inttovec, lastcomb, lastpart, lastperm, multinomial, nextcomb, nextpart, nextperm,
    numbcomb, numbcomp, numbpart, numbperm, partition, permute, powerset, prevcomb,
    prevpart, prevperm, randcomb, randpart, randperm, rankcomb, rankperm, setpartition,
    stirling1, stirling2, subsets, unrankcomb, unrankperm, vectoint]

> $randist := \mathbf{proc}(n, k)$
    local i; *#randomize();*
    return $(map(rand(1\ ..n),\ [seq(i, i = 1\ ..k)]))$
    end proc;
    $randist := \mathbf{proc}(n, k)\ \mathbf{local}\ i;\ \mathbf{return}\ map(rand(1\ ..n), [seq(i, i = 1\ ..k)])\ \mathbf{end\ proc}$ **(2)**

> $randist(365, 30)$;
[228, 324, 40, 107, 220, 39, 251, 50, 78, 148, 18, 146, 307, 290, 118, 78, 52, 100, 13, 343, 269, **(3)**
    293, 69, 190, 61, 336, 131, 304, 297, 302]

> $sort(randist(365, 30))$;
[16, 17, 26, 35, 72, 78, 81, 88, 88, 100, 127, 148, 153, 161, 176, 183, 183, 204, 220, 237, 238, **(4)**
    241, 250, 273, 294, 335, 339, 342, 351, 362]

> $sort(randist(365, 30))$;
[12, 48, 55, 69, 79, 84, 128, 144, 145, 152, 158, 170, 193, 195, 245, 250, 254, 270, 289, 294, **(5)**
    297, 300, 300, 309, 316, 319, 339, 341, 346, 350]

> $sort(randist(365, 30))$;
[37, 47, 56, 66, 89, 99, 101, 110, 118, 118, 121, 146, 152, 167, 187, 188, 188, 207, 227, 228, **(6)**
    232, 246, 265, 266, 280, 301, 320, 329, 334, 362]

> $sort(randist(365, 30))$;
[16, 17, 28, 40, 55, 57, 88, 98, 100, 102, 163, 172, 178, 205, 219, 222, 226, 233, 235, 249, 271, **(7)**
    272, 279, 292, 294, 310, 311, 322, 360, 364]

> $sort(randist(365, 30))$;
[1, 11, 19, 20, 25, 44, 50, 60, 62, 89, 96, 104, 105, 105, 107, 111, 142, 145, 180, 180, 186, 219, **(8)**
    222, 243, 244, 265, 302, 318, 358, 364]

> $sort(randist(365, 30))$;
[4, 12, 20, 41, 48, 82, 89, 105, 124, 133, 137, 150, 153, 165, 194, 250, 254, 260, 269, 270, 274, **(9)**
    283, 284, 288, 308, 311, 340, 348, 351, 359]

> $sort(randist(365, 30))$;
[19, 40, 49, 53, 67, 72, 73, 96, 96, 111, 139, 149, 157, 161, 167, 172, 198, 207, 244, 248, 276, **(10)**
    280, 299, 319, 335, 341, 346, 348, 353, 354]

> $sort(randist(365, 30))$;
[9, 58, 102, 107, 111, 124, 138, 164, 171, 178, 186, 202, 210, 211, 213, 219, 220, 258, 259, **(11)**
    270, 275, 276, 291, 292, 293, 294, 301, 335, 336, 340]

> $sort(randist(365, 30))$;
[11, 25, 39, 48, 51, 57, 62, 104, 114, 123, 132, 158, 175, 180, 189, 205, 222, 226, 241, 242, **(12)**
    243, 248, 278, 279, 317, 319, 329, 342, 347, 353]

> $sort(randist(365, 30))$;

$[5, 19, 37, 40, 73, 91, 101, 111, 111, 118, 151, 153, 168, 170, 172, 194, 218, 219, 234, 246,$ **(13)**
$266, 272, 276, 292, 293, 300, 327, 331, 334, 339]$

> $sort(randist(365, 30))$;
$[7, 64, 74, 99, 124, 153, 169, 169, 176, 186, 189, 209, 213, 215, 219, 228, 241, 249, 278, 283,$ **(14)**
$289, 300, 307, 314, 320, 331, 349, 351, 355, 363]$

> $sort(randist(365, 30))$;
$[10, 10, 15, 17, 23, 44, 52, 55, 68, 69, 72, 74, 80, 85, 95, 99, 134, 135, 182, 193, 202, 224, 264,$ **(15)**
$299, 301, 307, 329, 333, 342, 363]$

> $sort(randist(365, 30))$;
$[20, 20, 20, 28, 47, 49, 60, 91, 103, 142, 154, 165, 167, 171, 193, 204, 217, 223, 232, 236, 251,$ **(16)**
$274, 274, 287, 305, 316, 319, 346, 359, 362]$

> $sort(randist(365, 30))$;
$[24, 63, 63, 66, 67, 68, 81, 85, 88, 96, 119, 150, 160, 164, 167, 173, 177, 180, 183, 194, 197,$ **(17)**
$240, 250, 276, 311, 316, 326, 338, 342, 365]$

> $sort(randist(365, 30))$;
$[1, 2, 14, 19, 23, 91, 113, 114, 116, 125, 130, 130, 163, 178, 178, 188, 227, 236, 291, 313, 314,$ **(18)**
$321, 322, 329, 329, 329, 329, 335, 336, 363]$

> $sort(randist(365, 30))$;
$[4, 15, 16, 25, 33, 43, 53, 76, 83, 100, 121, 121, 136, 148, 163, 190, 231, 243, 246, 268, 268,$ **(19)**
$270, 276, 281, 285, 290, 292, 301, 316, 344]$

> $sort(randist(365, 30))$;
$[68, 75, 77, 81, 94, 101, 103, 134, 148, 149, 156, 158, 162, 171, 190, 204, 238, 258, 260, 263,$ **(20)**
$272, 281, 290, 298, 317, 331, 337, 350, 357, 359]$

> $sort(randist(365, 30))$;
$[3, 20, 27, 29, 47, 68, 69, 77, 109, 113, 113, 117, 126, 140, 142, 174, 194, 195, 206, 236, 249,$ **(21)**
$262, 284, 292, 295, 302, 323, 328, 352, 359]$

> $sort(randist(365, 30))$;
$[6, 16, 26, 41, 50, 59, 69, 87, 90, 147, 152, 160, 163, 178, 185, 192, 196, 209, 211, 217, 231,$ **(22)**
$231, 234, 257, 291, 298, 313, 329, 345, 357]$

> $sort(randist(365, 30))$;
$[2, 8, 16, 25, 32, 37, 42, 62, 68, 75, 79, 86, 97, 102, 103, 106, 127, 128, 143, 163, 176, 198,$ **(23)**
$204, 212, 226, 252, 265, 301, 302, 305]$

> $sort(randist(365, 30))$;
$[1, 7, 8, 14, 39, 54, 54, 62, 64, 85, 94, 98, 104, 105, 134, 142, 144, 148, 156, 212, 215, 245,$ **(24)**
$257, 265, 286, 299, 304, 315, 356, 356]$

>

Trial	1	2	3	4	5	6	7	8	9	10
Match?	1	1	1	0	1	1	1	1	1	0
Trial	11	12	13	14	15	16	17	18	19	20
Match?	1	0	1	1	1	1	1	0	0	1

$$Probability = 15\backslash 20$$

Error, missing operation

```
> sort(randist(365, 23));
[19, 30, 59, 60, 65, 92, 92, 108, 134, 145, 184, 184, 189, 190, 193, 259, 303, 307, 311, 311,
    346, 348, 350]
```
(25)

```
> sort(randist(365, 23));
[10, 16, 64, 77, 80, 96, 100, 118, 123, 126, 127, 130, 168, 172, 184, 223, 225, 258, 269, 280,
    283, 341, 354]
```
(26)

```
> sort(randist(365, 23));
[3, 30, 38, 50, 59, 59, 63, 120, 121, 143, 154, 178, 220, 229, 232, 243, 244, 255, 258, 279, 318,
    347, 358]
```
(27)

```
> sort(randist(365, 23));
[20, 46, 47, 59, 77, 80, 82, 83, 88, 111, 139, 204, 225, 231, 236, 241, 243, 257, 280, 281, 301,
    333, 365]
```
(28)

```
> sort(randist(365, 23));
[8, 19, 21, 34, 38, 53, 92, 96, 98, 114, 127, 133, 189, 190, 204, 238, 239, 282, 304, 324, 339,
    352, 358]
```
(29)

```
> sort(randist(365, 23));
[16, 19, 27, 36, 40, 52, 52, 56, 84, 88, 93, 111, 113, 125, 128, 134, 158, 223, 242, 256, 300,
    308, 365]
```
(30)

```
> sort(randist(365, 23));
[29, 33, 56, 84, 104, 142, 146, 169, 179, 185, 209, 210, 212, 216, 229, 235, 242, 260, 269, 301,
    340, 340, 348]
```
(31)

```
> sort(randist(365, 23))
[14, 15, 21, 37, 64, 99, 102, 117, 171, 177, 184, 211, 214, 219, 230, 243, 243, 274, 277, 281,
    302, 353, 363]
```
(32)

```
> sort(randist(365, 23))
[10, 10, 23, 38, 99, 104, 129, 138, 141, 147, 162, 173, 203, 205, 219, 247, 247, 270, 285, 328,
    328, 333, 358]
```
(33)

```
> sort(randist(365, 23))
[7, 19, 22, 50, 59, 61, 66, 101, 103, 118, 125, 199, 209, 226, 227, 232, 280, 287, 309, 333, 338,
    345, 363]
```
(34)

```
> sort(randist(365, 23))
[6, 17, 41, 85, 128, 159, 169, 197, 200, 201, 202, 208, 219, 220, 225, 229, 242, 256, 295, 303,
    353, 358, 360]
```
(35)

```
> sort(randist(365, 23))
[19, 22, 80, 91, 92, 105, 149, 156, 172, 173, 179, 193, 194, 194, 195, 229, 248, 310, 319, 329,
    353, 353, 363]
```
(36)

```
> sort(randist(365, 23))
[42, 60, 82, 89, 94, 94, 99, 123, 131, 174, 180, 189, 205, 218, 228, 249, 264, 268, 269, 270,
    287, 289, 307]
```
(37)

```
> sort(randist(365, 23))
[42, 58, 76, 93, 103, 112, 127, 142, 148, 151, 185, 199, 209, 215, 274, 296, 305, 310, 311, 320,
    330, 345, 355]
```
(38)

> $sort(randist(365, 23))$

$[13, 39, 47, 48, 57, 84, 93, 97, 107, 131, 177, 203, 206, 233, 255, 262, 271, 293, 298, 322, 337,$ **(39)**
    $337, 349]$

> $sort(randist(365, 23))$

$[26, 27, 34, 87, 121, 131, 132, 134, 154, 155, 157, 191, 202, 203, 207, 214, 217, 236, 239, 253,$ **(40)**
    $261, 305, 336]$

> $sort(randist(365, 23))$

$[4, 6, 20, 47, 71, 113, 125, 140, 141, 160, 163, 168, 187, 193, 204, 232, 260, 280, 300, 300,$ **(41)**
    $306, 312, 327]$

> $sort(randist(365, 23))$

$[8, 36, 51, 88, 95, 98, 102, 121, 124, 127, 130, 138, 152, 173, 186, 234, 258, 272, 295, 317,$ **(42)**
    $342, 365, 365]$

> $sort(randist(365, 23))$

$[42, 60, 90, 111, 115, 116, 129, 165, 219, 237, 237, 252, 263, 265, 291, 299, 315, 321, 322,$ **(43)**
    $330, 338, 353, 358]$

> $sort(randist(365, 23))$

$[33, 37, 39, 79, 97, 99, 127, 140, 163, 194, 219, 225, 247, 250, 274, 280, 302, 319, 333, 337,$ **(44)**
    $338, 341, 346]$

> $sort(randist(365, 23))$

$[24, 65, 86, 107, 116, 152, 159, 161, 173, 175, 193, 219, 221, 224, 229, 246, 250, 263, 272,$ **(45)**
    $274, 301, 349, 364]$

>

Trial	1	2	3	4	5	6	7	8	9	10
Match?	1	0	1	0	0	1	1	1	1	0
Trial	11	12	13	14	15	16	17	18	19	20
Match?	1	1	0	1	0	1	1	1	0	0

$Probability = 12 \backslash 20$