

Early Irish Law, Annals, and Computer Science

Christopher Guy Yocum

April 22, 2011

While recent advances in computer technology have enabled much in the way of data analysis, these advances have yet to make their way into Early Irish studies. One field in particular which would benefit from computational methods is the study of Early Irish law. Perhaps the most problematic aspect of Early Irish law is the lack of real world case law in which legally stipulated acts and outcomes are clearly described.¹ Instead, the law texts are silent or rely upon mythological leading cases. To verify the connections between theory and practise, we must turn to the early annals and chronicles, such as the *Chronicle of Ireland*.² The numerical information contained therein are particularly amenable to computational methods. This article seeks to use evidence gained from the various Early Irish annal sources in an attempt to assess the real world validity of Early Irish legal sanctions. Crucial to this investigation is entry for the year 893 in the *Chronicle of Ireland* in which a fight is detailed between Ulstermen and the *Cenél Eógain* in the cathedral of Armagh on Whitsunday – a fight incurring a penalty of 210 *cumals* of fines and four Ulstermen executed.³ What I propose to do is establish the approximate number of people who died during the fighting by feeding the rules of Early Irish law into a computer program which will then work backwards from the fine to estimate the number of people who died that

¹Fergus Kelly. *A Guide to Early Irish Law*. Dublin: Dublin Institute for Advanced Studies, 1988, pp. 238–240.

²T. M. Charles-Edwards. *The Chronicle of Ireland*. Vol. 1. Liverpool: Liverpool University Press, 2006.

³*ibid.*, pp. 338–339.

day. If the numbers are feasible this will help determine whether Early Irish law as preserved in the law tracts was indeed a functioning legal system at the time of the entry. Independent verification of the result can be obtained by scrutiny of the methodology described in the next section and scrutiny of the provided computer program for any defects.

1 Methodology

As with the old adage, ‘garbage in; garbage out’, the method by which the numbers used in the analysis are generated is of the utmost importance. A few assumptions must be made about the source material which have a large impact upon the value of the current endeavour. The first assumption is that the annals as they describe the fight are *accurate*. The normal methodology among those who study the annals suggests that if the entry appears in both AU and CS, it is likely to be accurate.⁴ In this instance, the altercation appears both in the *Annals of Ulster* and also, for the same year, in the *Chronicon Scottorum* as edited by Gearóid Mac Niocaill and translated by Thomas Charles-Edwards.

Cumusc cengigis a n-Árd Macha etir Cinel nEógain & Ulltu dú a ttorchair sochaidhe .i. eidir Aidid mac Laigne & Flaithbertach mac Murchadha cor sgar Mael Bríge. Ríar Maoilbrigde iar sin et enigh Padraicc ó cuigedaibh hErend la gabail a n-aitire tricha secht cumal et MS folio 193va(289a) cethrar hi crocaib ó Ulltaibh cenmothád cealla et manchu.⁵

893.2

2. There was a disturbance at Whitsun in Armagh between Cenél nEógain and the Ulstermen, *that is, between Aidéid son of Laigne and Flaithbertach son of Murchad*, in which many fell, *until Máel Tuile*

⁴Kathleen Hughes. *Early Christian Ireland: Introduction to the Sources*. London: Sources of History Ltd, Hodder and Stoughton, 1972, pp. 102–108.

⁵Gearóid Mac Niocaill. “Chronicon Scottorum”. online. [accessed 16 April 2011]. URL: <http://www.ucc.ie/celt/published/T100016/index.html>, p. 149.

*parted them. Máel Tuile then gave his judgement and [decreed compensation for] the honour of Patrick from the provinces of Ireland, together with the taking of the **aitiri**: 210 **cumala**, and four of the Ulstermen were to be handed, apart from [grants of] churches and monks.⁶*

It should be noted that the roman text in Charles-Edward's translation derives from the *Chronicle of Ireland* while the italicised text comes exclusively from the *Chronicon Scottorum*, which is among the Clonmacnois group of annals. The textual history linking the two sources is complicated as only the daughter texts survive which makes a determination of what is and is not in the Chronicle of Ireland difficult. Thomas-Charles-Edwards states:

My judgement is that most entries in the Annals of Ulster were in the Chronicle of Ireland. For the Clonmacnois group the issue is more difficult. It looks as though there was more revision of the text there than at Armagh.⁷

This means that the fine as recorded was likely added in the revisions of the text to which Charles-Edwards alludes. This extra information, however, should not be dismissed as inaccurate as the scribe who wrote in *Chronicon Scottorum* may have had access to sources of information which are not extant today. With these problems in mind, the fine amount seems to be reasonably secure.

The second assumption is that Early Irish law has enough material to build a computational model. This assumption is more problematic as the accuracy of Early Irish law is still disputed.⁸ For example, Prof. Kelly suggests that the fine for murder is not possible to reconstruct based on the law tracts alone.⁹ While this seems reasonable, it should not block attempts to correlate and give analysis on the basis of the evidence currently known.

For this analysis, the fines given in *Bretha Crólige* will be used, which is not without methodological difficulty.¹⁰ There are two types of fines in Early Irish

⁶Charles-Edwards, *The Chronicle of Ireland*, pp. 338–339.

⁷ibid., pp. 19–20.

⁸Kelly, *A Guide to Early Irish Law*, pp. 238–240

⁹ibid., pp. 125–126.

¹⁰D. A. Binchy. "Bretha Crólige". In: *Ériu* 12 (1938), pp. 1–77.

law which would need to be considered. The first is *éric*, which is a flat rate of seven *cumals* for each freeman killed,¹¹ and one could make the argument that only *éric* was meant by ‘tricha secht ccumal’ as it is easily divisible and thus gives thirty deaths. The other is *díre* which is calculated according to the individuals *lóg n-enech*, or honour-price. As the annal entry is silent concerning which law was applied to calculate the fine, only *díre* will be calculated. One could argue that *díre* was based on Máel Tuile’s *lóg n-enech*; however, in his judgement, Máel Tuile states that compensation is paid for the ‘honour of St. Patrick’ and not himself and this analysis therefore excludes Máel Tuile from the calculation.¹²

The third assumption – that the numbers generated by such an analysis are indeed reliable indicators of how the fine was calculated in the first instance – depends upon the previous two.

A fourth assumption and one that directly affects the outcome of the numbers involved is that no kings were killed in the altercation. The main reason for this is that no kings are listed as dead even though a ‘many’ died there. The annals in general had a bias towards ecclesiastical and royal events such as inauguration and deaths (in battle or otherwise),¹³ and if a king had died at this altercation, the balance of probabilities argues that his death would have been noted in the annal entries. A further methodological reason for excluding kings is that their inclusion would heavily weight the numbers, as a king is worth seven *cumals*, and this investigation seeks to use as reliably simplified a model as possible.

A final assumption is that *Cáin Adomnan* was not in force in the Whitsunday situation.¹⁴ As with kings, under this law women and children were valued at seven *cumals* if they were killed. As the incident happened in a church, it is simple to assume that women were in attendance at a church function, but it is most likely that their deaths would not have been recorded. And again, method-

¹¹Kelly, *A Guide to Early Irish Law*, p. 126.

¹²St. Patrick is dead and this complicates the matter as Early Irish law is unclear on the *lóg n-enech* paid for someone who is not a direct victim of murder.

¹³Hughes, *Early Christian Ireland: Introduction to the Sources*, pp. 124–126.

¹⁴See Pádraig P. Ó Néill and David N. Dumville, eds. *Cáin Adomnáin and Canones Adomnani*. Cambridge: Department of Anglo-Saxon, Norse, and Celtic, University of Cambridge, 2003; Thomas O’Laoughlin, ed. *Adomnán at Birr, 697 AD*. Dublin: Four Courts Press, 2001; Máirí Ní Dhonnchadha. “The Guarantor List of *Cáin Adomnán*, 697”. In: *Peritia: Journal of the Medieval Academy of Ireland* 1 (1982), pp. 178–215.

ologically, their inclusion would skew the results in the same manner as kings.

The format in which data is inputted and the presentation method of the results must also be considered before proceeding. The implications of the algorithm described below are that there is no one correct numerical answer, and instead a range of answers will be provided. To present the data in the more easily understood form, this will be listed in a table from highest number of deaths to the lowest number of deaths, and from this, a more detailed analysis of the data will be attempted.

2 Description of Algorithm Used

Having detailed the assumptions made of the information presented to the computer program, the computational methods themselves must be defined. If the assumptions are deemed acceptable but the theoretical underpinnings of the computation are flawed, this exercise will be in vain. The type of calculation required here is well-known in Computer Science. The procedure to process the data is an example of the “Change Making Problem” first solved algorithmically by S. K. Chang and A. Gill in 1970.¹⁵ The situation faced by Chang and Gill is analogous to the one presented by here. How do we take prices, in this case 10.5, 7, 3, and 2 from *Bretha Crólige*, and turn them into change which adds up to the amount we are given, which is 210? To solve this problem, we take the list of all possible prices and the target value. For each price, we multiply the price across all possible combinations between 0 and the target divided by the price which is then rounded to the next integer. Then we subtract the target amount which yields a smaller amount, to which we apply the same process. The solutions are then built up into a list of lists and presented to the user.

¹⁵S. K. Chang and A. Gill. “Algorithmic Solution of the Change-Making Problem”. In: *Journal of the Association for Computing Machinery* 17.1 (1970), pp. 113–122. ISSN: 0004-5411. DOI: <http://doi.acm.org/10.1145/321556.321567>. I would like to thank Dr. Miles Gould of the University of Edinburgh, School of Informatics for verifying my results and for his help in providing an implementation of the solution.

3 Discussion and Data Analysis

Using the algorithm, the assumptions, and methodology described above produces 2,196 possible combinations. In this case as the number of possible combinations is very large, only the range of possibilities is of interest to us. (The full table of possible combinations is available in the appendix.)

As intuition would suggest, the lower the amount of a fine for a given class, the more the numbers are weighted toward that particular class. Thus, at the high end of the table, 20 *Aire Ard* would have been killed, while at the other extreme, 106 *Flesach* would have died.

While the results of the table are correct as per the methodology described earlier, they raise a number of questions. First, as the entry in the *Chronicle of Ireland* describe the number of people killed as ‘many’, how many is ‘many’? Second, even if the table describes some number that can be considered ‘many’, what degree of accuracy does this table attain? Third and finally, if these questions can be answered satisfactorily, what does this mean in terms of other numerical values given in the annals and their usefulness in analysing other parts of Early Irish law?

As the answers to the second and third questions depend on the resolution of the first, we will begin by exploring what ‘many’ may have meant in an Early Irish context. The annals are replete with accounts of hostilities resulting in the deaths of many thousands. As these deaths occur during annual *slugad* ‘hosting’, which are required of kings in Early Irish law,¹⁶ the deaths are not illegal and thus do not engage the apparatus of the law. The deaths must be identifiably illegal for our method to be applied successfully. Within the early annals, there are relatively few of these instances, but even if the deaths occurring from hosting are included in the analysis, the interpretation is fraught with difficulty. For many of the early annal entries, the numbers are suspiciously similar in number. In the *Chronicle of Ireland*, for example, there are ten examples of battle statistics in the years: 764, 848, 850, 869, 886, 896, 910.¹⁷ The majority of these references occur in the

¹⁶Kelly, *A Guide to Early Irish Law*, p. 19.

¹⁷Charles-Edwards, *The Chronicle of Ireland*, pp. 232–233; 304–307; 321; 334; 340–341; 348. For criticism see D. P. McCarthy. *The Irish Annals: Their Genesis, Evolution and History*. Dublin: Four Courts Press, 2008, pp. 108–110.

ninth-century and within these, the year 848 is unique with four entries of 700, 1200, 1200, and 500 deaths respectively. From this information, it would seem that the Irish annalist was not in possession of the actual number of dead from any particular battle and many of the entries in the *Chronicle of Ireland* only refer to the kings or notable nobles who die in any one battle and the victor of the battle. In addition, it is highly doubtful that the Irish spent time counting dead enemies in a systematic way. Thus, many of the numbers given are rounded or could be fabrications or synonyms for ‘many’. As much of the evidence is unreliable at best and fabrications at worst, it is unusable.

In the modern sense, the low end of the range above, i. e. twenty deaths, is mass murder. Given the fact that much violence is recorded both in the annals and in the saga literature, could twenty murders be justified? Having the Uí Néill and the Ulad in the same church was probably not an entirely stable situation, but the annal entry is vague about this aspect of the encounter. It could be argued that twenty people dying, especially of the social standing indicated by *Bretha Crólige*, would have caused more commentary on the episode, but on the other hand the annalists are, as a breed, tight-lipped, and only those of the very highest social standing obtain a named entry in the annals. At the high end of the table, one hundred six deaths, while horrific in modern eyes, could plausibly be given the casual reference as ‘many’. Again, as the eighteen are of relatively low social standing, the annalists are far less likely to give any more detail about their demise.

The word used in the entry itself, *sochaidhe* may help illuminate the situation.¹⁸ Charles-Edwards chooses to translate this word as ‘many’, which may be misleading. If the DIL definition of ‘multitude, crowd, host’ is substituted then the outcome of the computation is easier to grasp. Whichever outcome is deemed reliable (20, 30, or 106), it does seem to meet the definition of *sochaidhe* in DIL and ‘many’ as translated by Charles-Edwards thus the altercation was a large loss of life even in the view of the ninth century Irish.

This returns us to the second question, namely, the accuracy of the table in relation to Early Irish law. As Prof. Kelly suggests, the rules and regulations which

¹⁸DIL S 317.081

govern murder in Early Irish law are difficult to determine.¹⁹ In the methodology outlined above, much of this complexity is deferred so that the methods can be clearly demonstrated, but this does not mean that inherent difficulties do not exist. The uncertainty in the application of Early Irish law in these circumstances obscures the results presented here. The most significant difficulty is the precision of the results. There is a difference of eighty-six between the lowest and highest number of dead estimated, and this the spread is significant enough to cause concern when interpreting the evidence. If the difference were smaller, the accuracy of the entry would seem more reliable. The reason for such a large spread could be the simplified methodology and the number of assumptions used in the construction of the model.

As for the third question posed above, namely the implications for other numerical values given in the annals, this depends heavily upon the previous two questions being answered with precision/accuracy in the positive. As seen above, these questions can only be answered tentatively, and thus, implications for the annals and Early Irish law are rather unclear. Much of this uncertainty is due to the fact that Early Irish law has no case law relating to it from before the sixteenth century.²⁰ Robin Chapman Stacey argues that ‘while [the lawyers] certainly shaped their raw material ... they did not entirely invent it.’²¹ For the later period, Kathrine Simms uses this and other evidence for the viability of troop quartering in Early Modern Ireland.²² Nerys Patterson uses the same evidence and the Pseudo-Historical Prologue to the *Senchas Már* to attempt to determine both the viability of Early Irish law in the later period and the attempts of the later native lawyers to argue their case in the face of the spread of English common law in Ireland.²³ Both positions take their evidence from a much more fully documented era in Irish history. For the early period, as internal evidence from

¹⁹Kelly, *A Guide to Early Irish Law*, pp. 125–126.

²⁰*ibid.*, pp. 238–240.

²¹Robin Chapman Stacey. *The Road to Judgement: From Custom to Court in Medieval Ireland and Wales*. Philadelphia: University of Pennsylvania Press, 1994, p. 26

²²Katharine Simms. “Gaelic Military History and the Later Brehon Law Commentaries”. In: *Unity in Diversity*. Ed. by Cathal Ó Háinle and Donald E. Meek. Dublin: The School of Irish, Trinity College, Dublin, 2004, pp. 51–67.

²³Nerys Patterson. “Brehon Law in Late Medieval Ireland: ‘Antiquarian and Obsolete’ or ‘Traditional and Functional’?” In: *Cambridge Medieval Celtic Studies* 17 (1989), pp. 43–63.

Early Irish law is lacking, much depends on the evidence from the annals. From annalistic sources a number of things can be taken: first, the annalists are more interested in the promulgation of Church initiated and kingly-associated *cáin*;²⁴ second, while the creation of the *Senchas Már* is noted in the annals, no other non-*cáin* related law is recorded. This circumstance is curious as all Early Irish law has connections to the monastery schools and other Church-related education centres.²⁵ It would seem logical that Early Irish law would hold more interest to the annalists than is related therein. One possible explanation is that the annalists took Early Irish law for granted and that therefore only changes to the law itself were worth noting in the annals; as these changes were often connected to kingly inauguration, their inclusion into the annals was guaranteed. That these changes to the law were worth the notice of the annalists suggests that these regulations were somehow politically important even if they were only sporadically employed such that evidence of their use does not come down to us today.

However, there are a few suggestive entries in the *Chronicle of Ireland* other than the one in focus in this article. For instance, in the year 746, the *Chronicle of Ireland* states that: ‘A violation of sanctuary at Domnach Pátraic; six **cimbidi** were hanged.’²⁶ There are a few others like this which hint at the machinery of legal justice moving, in whatever form it took in early Ireland. The main problem is two fold. First, there is no case law which would help define the law in early Ireland. Second, it would seem that the annalists who worked on the *Chronicle of Ireland* were more interested in cross-border disputes, wars, and, as shown in the quote above, the affairs of the church. This is reasonable for a chronicle which was first started on the island of Iona and was kept by the monasteries later in its existence.²⁷ Internal strife or internal legal affairs were probably not either important enough for the annalist to include, or simply not known to him from his own sources of information. However, even though the annalists did not record the doings of Early Irish judges and lawyers, it does not follow that

²⁴T. M. Charles-Edwards. *Early Christian Ireland*. Cambridge: Cambridge University Press, 2000, pp. 559–569.

²⁵T. M. Charles-Edwards. “The Context and Uses of Literacy in Early Christian Ireland”. In: *Literacy in Medieval Celtic Societies*. Ed. by Huw Pryce. Cambridge: Cambridge University Press, pp. 62–83.

²⁶Charles-Edwards, *The Chronicle of Ireland*, p. 218.

²⁷McCarthy, *The Irish Annals*, pp. 95–99.

the law was not used at all as this would be argumentation *ex silentio*. Given the above arguments, the question is still open.

4 Conclusion

The purpose of this paper was to apply methods of Computer Science to Early Irish law. The only means to do that, because of the dearth of case law material, was to turn to a reliable means of obtaining legal outcomes. The information taken from the *Chronicle of Ireland* in 893 was considered the only such source. While several assumptions are made about the methods used in this paper, the results are generally in line with expectations. The spread of deaths which was calculated from *Bretha Crólige* do seem to fit the description of ‘many’ from the original annal entry. In addition, the method used to generate these numbers is as interesting as the numbers themselves. The use of Computer Science demonstrates that computers have a place when used judiciously in the study of Early Irish law and other Early Irish literature. While the methods used here did not completely or definitively answer the question as to the historic use of Early Irish law, they did establish an upper and lower boundary for what was considered a large loss of life during peacetime in ninth century Ireland. However, this is only a first attempt at the problem which calls for further research.

5 Code

The code found below is written in the Ocaml language, which is a strict, statically typed language of the ML family of computer programming languages.²⁸

```
let rec range i j =  
  if i > j then
```

²⁸For the theoretical background for Ocaml, see Didier Rémy and Jerome Vouillon. “Objective ML: An Effective Object-Oriented Extension to ML”. In: *TAPOS 4.1* (1998), pp. 27–50. DOI: [http://dx.doi.org/10.1002/\(SICI\)1096-9942\(1998\)4:1<27::AID-TAPO3>3.0.CO;2-4](http://dx.doi.org/10.1002/(SICI)1096-9942(1998)4:1<27::AID-TAPO3>3.0.CO;2-4). For more information about Ocaml, see <http://caml.inria.fr/ocaml/index.en.html> [last accessed April 22, 2011].

```

    []
  else
    i :: (range (i+1) j)

let cons x xs = x::xs

let fuzz = 0.00001

(* from http://www.podval.org/~sds/ocaml-sucks.html *)
let round x = int_of_float (floor (x +. 0.5))

let float_eq x y = abs_float (x -. y) <= fuzz

let divides n d =
  let q = n /. d in
    float_eq q (float_of_int (truncate q))

(* the actual meat of the code *)
let rec ways ps tgt =
  match ps with
  | [] -> []
  | [p] -> if (divides tgt p && tgt >= 0.) then
      [[round (tgt /. p)]] else []
  | p::rest -> List.concat (List.map (helper p rest tgt)
      (range 0 (round (tgt /. p))))
  and
  helper p ps tgt n =
    let ws = ways ps (tgt -. (float_of_int n) *. p) in
      List.map (cons n) ws

let values = [10.5;7.;3.;2.]

let target = 210.

```

```

let answers = ways values target

let string_of_answers lst =
  List.map (fun x -> List.map string_of_int x) lst

let print_answers lst =
  List.iter print_endline
    (List.map
      (fun x -> String.concat ";" x)
      lst)

let _ = print_answers (string_of_answers answers)

```

References

- Binchy, D. A. “Bretha Crólige”. In: *Ériu* 12 (1938), pp. 1–77.
- Chang, S. K. and A. Gill. “Algorithmic Solution of the Change-Making Problem”. In: *Journal of the Association for Computing Machinery* 17.1 (1970), pp. 113–122. ISSN: 0004-5411. DOI: <http://doi.acm.org/10.1145/321556.321567>.
- Charles-Edwards, T. M. *Early Christian Ireland*. Cambridge: Cambridge University Press, 2000.
- *The Chronicle of Ireland*. Vol. 1. Liverpool: Liverpool University Press, 2006.
 - “The Context and Uses of Literacy in Early Christian Ireland”. In: *Literacy in Medieval Celtic Societies*. Ed. by Huw Pryce. Cambridge: Cambridge University Press, pp. 62–83.
- Hughes, Kathleen. *Early Christian Ireland: Introduction to the Sources*. London: Sources of History Ltd, Hodder and Stoughton, 1972.
- Kelly, Fergus. *A Guide to Early Irish Law*. Dublin: Dublin Institute for Advanced Studies, 1988.
- Mac Niocaill, Gearóid. “Chronicon Scotorum”. online. [accessed 16 April 2011]. URL: <http://www.ucc.ie/celt/published/T100016/index.html>.
- McCarthy, D. P. *The Irish Annals: Their Genesis, Evolution and History*. Dublin: Four Courts Press, 2008.
- Ní Dhonnchadha, Máirí. “The Guarantor List of Cáin Adomnán, 697”. In: *Peritia: Journal of the Medieval Academy of Ireland* 1 (1982), pp. 178–215.

- Ó Néill, Pádraig P. and David N. Dumville, eds. *Cáin Adomnáin and Canones Adomnani*. Cambridge: Department of Anglo-Saxon, Norse, and Celtic, University of Cambridge, 2003.
- O’Laoughlin, Thomas, ed. *Adomnán at Birr, 697 AD*. Dublin: Four Courts Press, 2001.
- Patterson, Nerys. “Brehon Law in Late Medieval Ireland: ‘Antiquarian and Obsolete’ or ‘Traditional and Functional’?” In: *Cambridge Medieval Celtic Studies* 17 (1989), pp. 43–63.
- Rémy, Didier and Jerome Vouillon. “Objective ML: An Effective Object-Oriented Extension to ML”. In: *TAPOS* 4.1 (1998), pp. 27–50. doi: [http://dx.doi.org/10.1002/\(SICI\)1096-9942\(1998\)4:1<27::AID-TAP03>3.0.CO;2-4](http://dx.doi.org/10.1002/(SICI)1096-9942(1998)4:1<27::AID-TAP03>3.0.CO;2-4).
- Simms, Katharine. “Gaelic Military History and the Later Brehon Law Commentaries”. In: *Unity in Diversity*. Ed. by Cathal Ó Háinle and Donald E. Meek. Dublin: The School of Irish, Trinity College, Dublin, 2004, pp. 51–67.
- Stacey, Robin Chapman. *The Road to Judgement: From Custom to Court in Medieval Ireland and Wales*. Philadelphia: University of Pennsylvania Press, 1994.

A Data

Aire Ard	Aire Tuise	Bo Aire	Flesach
0	0	0	106
0	0	2	102
0	0	4	99
0	0	6	96
0	0	8	93
0	0	10	90
0	0	12	87
0	0	14	84
0	0	16	81
0	0	18	78
0	0	20	75
0	0	22	72
0	0	24	69
0	0	26	66
0	0	28	63
0	0	30	60
0	0	32	57
0	0	34	54
0	0	36	51
0	0	38	48

Aire Ard	Aire Tuise	Bo Aire	Flesach
0	0	40	45
0	0	42	42
0	0	44	39
0	0	46	36
0	0	48	33
0	0	50	30
0	0	52	27
0	0	54	24
0	0	56	21
0	0	58	18
0	0	60	15
0	0	62	12
0	0	64	9
0	0	66	6
0	0	68	3
0	0	70	0
0	1	1	100
0	1	3	97
0	1	5	94
0	1	7	91
0	1	9	88
0	1	11	85
0	1	13	82
0	1	15	79
0	1	17	76
0	1	19	73
0	1	21	70
0	1	23	67
0	1	25	64
0	1	27	61
0	1	29	58
0	1	31	55
0	1	33	52
0	1	35	49
0	1	37	46
0	1	39	43
0	1	41	40
0	1	43	37
0	1	45	34
0	1	47	31

Aire Ard	Aire Tuise	Bo Aire	Flesach
0	1	49	28
0	1	51	25
0	1	53	22
0	1	55	19
0	1	57	16
0	1	59	13
0	1	61	10
0	1	63	7
0	1	65	4
0	1	67	1
0	2	0	98
0	2	2	95
0	2	4	92
0	2	6	89
0	2	8	86
0	2	10	83
0	2	12	80
0	2	14	77
0	2	16	74
0	2	18	71
0	2	20	68
0	2	22	65
0	2	24	62
0	2	26	59
0	2	28	56
0	2	30	53
0	2	32	50
0	2	34	47
0	2	36	44
0	2	38	41
0	2	40	38
0	2	42	35
0	2	44	32
0	2	46	29
0	2	48	26
0	2	50	23
0	2	52	20
0	2	54	17
0	2	56	14
0	2	58	11

Aire Ard	Aire Tuise	Bo Aire	Flesach
0	2	60	8
0	2	62	5
0	2	64	2
0	3	1	93
0	3	3	90
0	3	5	87
0	3	7	84
0	3	9	81
0	3	11	78
0	3	13	75
0	3	15	72
0	3	17	69
0	3	19	66
0	3	21	63
0	3	23	60
0	3	25	57
0	3	27	54
0	3	29	51
0	3	31	48
0	3	33	45
0	3	35	42
0	3	37	39
0	3	39	36
0	3	41	33
0	3	43	30
0	3	45	27
0	3	47	24
0	3	49	21
0	3	51	18
0	3	53	15
0	3	55	12
0	3	57	9
0	3	59	6
0	3	61	3
0	3	63	0
0	4	0	91
0	4	2	88
0	4	4	85
0	4	6	82
0	4	8	79

Aire Ard	Aire Tuise	Bo Aire	Flesach
0	4	10	76
0	4	12	73
0	4	14	70
0	4	16	67
0	4	18	64
0	4	20	61
0	4	22	58
0	4	24	55
0	4	26	52
0	4	28	49
0	4	30	46
0	4	32	43
0	4	34	40
0	4	36	37
0	4	38	34
0	4	40	31
0	4	42	28
0	4	44	25
0	4	46	22
0	4	48	19
0	4	50	16
0	4	52	13
0	4	54	10
0	4	56	7
0	4	58	4
0	4	60	1
0	5	1	86
0	5	3	83
0	5	5	80
0	5	7	77
0	5	9	74
0	5	11	71
0	5	13	68
0	5	15	65
0	5	17	62
0	5	19	59
0	5	21	56
0	5	23	53
0	5	25	50
0	5	27	47

Aire Ard	Aire Tuise	Bo Aire	Flesach
0	5	29	44
0	5	31	41
0	5	33	38
0	5	35	35
0	5	37	32
0	5	39	29
0	5	41	26
0	5	43	23
0	5	45	20
0	5	47	17
0	5	49	14
0	5	51	11
0	5	53	8
0	5	55	5
0	5	57	2
0	6	0	84
0	6	2	81
0	6	4	78
0	6	6	75
0	6	8	72
0	6	10	69
0	6	12	66
0	6	14	63
0	6	16	60
0	6	18	57
0	6	20	54
0	6	22	51
0	6	24	48
0	6	26	45
0	6	28	42
0	6	30	39
0	6	32	36
0	6	34	33
0	6	36	30
0	6	38	27
0	6	40	24
0	6	42	21
0	6	44	18
0	6	46	15
0	6	48	12

Aire Ard	Aire Tuise	Bo Aire	Flesach
0	6	50	9
0	6	52	6
0	6	54	3
0	6	56	0
0	7	1	79
0	7	3	76
0	7	5	73
0	7	7	70
0	7	9	67
0	7	11	64
0	7	13	61
0	7	15	58
0	7	17	55
0	7	19	52
0	7	21	49
0	7	23	46
0	7	25	43
0	7	27	40
0	7	29	37
0	7	31	34
0	7	33	31
0	7	35	28
0	7	37	25
0	7	39	22
0	7	41	19
0	7	43	16
0	7	45	13
0	7	47	10
0	7	49	7
0	7	51	4
0	7	53	1
0	8	0	77
0	8	2	74
0	8	4	71
0	8	6	68
0	8	8	65
0	8	10	62
0	8	12	59
0	8	14	56
0	8	16	53

Aire Ard	Aire Tuise	Bo Aire	Flesach
0	8	18	50
0	8	20	47
0	8	22	44
0	8	24	41
0	8	26	38
0	8	28	35
0	8	30	32
0	8	32	29
0	8	34	26
0	8	36	23
0	8	38	20
0	8	40	17
0	8	42	14
0	8	44	11
0	8	46	8
0	8	48	5
0	8	50	2
0	9	1	72
0	9	3	69
0	9	5	66
0	9	7	63
0	9	9	60
0	9	11	57
0	9	13	54
0	9	15	51
0	9	17	48
0	9	19	45
0	9	21	42
0	9	23	39
0	9	25	36
0	9	27	33
0	9	29	30
0	9	31	27
0	9	33	24
0	9	35	21
0	9	37	18
0	9	39	15
0	9	41	12
0	9	43	9
0	9	45	6

Aire Ard	Aire Tuise	Bo Aire	Flesach
0	9	47	3
0	9	49	0
0	10	0	70
0	10	2	67
0	10	4	64
0	10	6	61
0	10	8	58
0	10	10	55
0	10	12	52
0	10	14	49
0	10	16	46
0	10	18	43
0	10	20	40
0	10	22	37
0	10	24	34
0	10	26	31
0	10	28	28
0	10	30	25
0	10	32	22
0	10	34	19
0	10	36	16
0	10	38	13
0	10	40	10
0	10	42	7
0	10	44	4
0	10	46	1
0	11	1	65
0	11	3	62
0	11	5	59
0	11	7	56
0	11	9	53
0	11	11	50
0	11	13	47
0	11	15	44
0	11	17	41
0	11	19	38
0	11	21	35
0	11	23	32
0	11	25	29
0	11	27	26

Aire Ard	Aire Tuise	Bo Aire	Flesach
0	11	29	23
0	11	31	20
0	11	33	17
0	11	35	14
0	11	37	11
0	11	39	8
0	11	41	5
0	11	43	2
0	12	0	63
0	12	2	60
0	12	4	57
0	12	6	54
0	12	8	51
0	12	10	48
0	12	12	45
0	12	14	42
0	12	16	39
0	12	18	36
0	12	20	33
0	12	22	30
0	12	24	27
0	12	26	24
0	12	28	21
0	12	30	18
0	12	32	15
0	12	34	12
0	12	36	9
0	12	38	6
0	12	40	3
0	12	42	0
0	13	1	58
0	13	3	55
0	13	5	52
0	13	7	49
0	13	9	46
0	13	11	43
0	13	13	40
0	13	15	37
0	13	17	34
0	13	19	31

Aire Ard	Aire Tuise	Bo Aire	Flesach
0	13	21	28
0	13	23	25
0	13	25	22
0	13	27	19
0	13	29	16
0	13	31	13
0	13	33	10
0	13	35	7
0	13	37	4
0	13	39	1
0	14	0	56
0	14	2	53
0	14	4	50
0	14	6	47
0	14	8	44
0	14	10	41
0	14	12	38
0	14	14	35
0	14	16	32
0	14	18	29
0	14	20	26
0	14	22	23
0	14	24	20
0	14	26	17
0	14	28	14
0	14	30	11
0	14	32	8
0	14	34	5
0	14	36	2
0	15	1	51
0	15	3	48
0	15	5	45
0	15	7	42
0	15	9	39
0	15	11	36
0	15	13	33
0	15	15	30
0	15	17	27
0	15	19	24
0	15	21	21

Aire Ard	Aire Tuise	Bo Aire	Flesach
0	15	23	18
0	15	25	15
0	15	27	12
0	15	29	9
0	15	31	6
0	15	33	3
0	15	35	0
0	16	0	49
0	16	2	46
0	16	4	43
0	16	6	40
0	16	8	37
0	16	10	34
0	16	12	31
0	16	14	28
0	16	16	25
0	16	18	22
0	16	20	19
0	16	22	16
0	16	24	13
0	16	26	10
0	16	28	7
0	16	30	4
0	16	32	1
0	17	1	44
0	17	3	41
0	17	5	38
0	17	7	35
0	17	9	32
0	17	11	29
0	17	13	26
0	17	15	23
0	17	17	20
0	17	19	17
0	17	21	14
0	17	23	11
0	17	25	8
0	17	27	5
0	17	29	2
0	18	0	42

Aire Ard	Aire Tuise	Bo Aire	Flesach
0	18	2	39
0	18	4	36
0	18	6	33
0	18	8	30
0	18	10	27
0	18	12	24
0	18	14	21
0	18	16	18
0	18	18	15
0	18	20	12
0	18	22	9
0	18	24	6
0	18	26	3
0	18	28	0
0	19	1	37
0	19	3	34
0	19	5	31
0	19	7	28
0	19	9	25
0	19	11	22
0	19	13	19
0	19	15	16
0	19	17	13
0	19	19	10
0	19	21	7
0	19	23	4
0	19	25	1
0	20	0	35
0	20	2	32
0	20	4	29
0	20	6	26
0	20	8	23
0	20	10	20
0	20	12	17
0	20	14	14
0	20	16	11
0	20	18	8
0	20	20	5
0	20	22	2
0	21	1	30

Aire Ard	Aire Tuise	Bo Aire	Flesach
0	21	3	27
0	21	5	24
0	21	7	21
0	21	9	18
0	21	11	15
0	21	13	12
0	21	15	9
0	21	17	6
0	21	19	3
0	21	21	0
0	22	0	28
0	22	2	25
0	22	4	22
0	22	6	19
0	22	8	16
0	22	10	13
0	22	12	10
0	22	14	7
0	22	16	4
0	22	18	1
0	23	1	23
0	23	3	20
0	23	5	17
0	23	7	14
0	23	9	11
0	23	11	8
0	23	13	5
0	23	15	2
0	24	0	21
0	24	2	18
0	24	4	15
0	24	6	12
0	24	8	9
0	24	10	6
0	24	12	3
0	24	14	0
0	25	1	16
0	25	3	13
0	25	5	10
0	25	7	7

Aire Ard	Aire Tuise	Bo Aire	Flesach
0	25	9	4
0	25	11	1
0	26	0	14
0	26	2	11
0	26	4	8
0	26	6	5
0	26	8	2
0	27	1	9
0	27	3	6
0	27	5	3
0	27	7	0
0	28	0	7
0	28	2	4
0	28	4	1
0	29	1	2
0	30	0	0
2	0	1	93
2	0	3	90
2	0	5	87
2	0	7	84
2	0	9	81
2	0	11	78
2	0	13	75
2	0	15	72
2	0	17	69
2	0	19	66
2	0	21	63
2	0	23	60
2	0	25	57
2	0	27	54
2	0	29	51
2	0	31	48
2	0	33	45
2	0	35	42
2	0	37	39
2	0	39	36
2	0	41	33
2	0	43	30
2	0	45	27
2	0	47	24

Aire Ard	Aire Tuise	Bo Aire	Flesach
2	0	49	21
2	0	51	18
2	0	53	15
2	0	55	12
2	0	57	9
2	0	59	6
2	0	61	3
2	0	63	0
2	1	0	91
2	1	2	88
2	1	4	85
2	1	6	82
2	1	8	79
2	1	10	76
2	1	12	73
2	1	14	70
2	1	16	67
2	1	18	64
2	1	20	61
2	1	22	58
2	1	24	55
2	1	26	52
2	1	28	49
2	1	30	46
2	1	32	43
2	1	34	40
2	1	36	37
2	1	38	34
2	1	40	31
2	1	42	28
2	1	44	25
2	1	46	22
2	1	48	19
2	1	50	16
2	1	52	13
2	1	54	10
2	1	56	7
2	1	58	4
2	1	60	1
2	2	1	86

Aire Ard	Aire Tuise	Bo Aire	Flesach
2	2	3	83
2	2	5	80
2	2	7	77
2	2	9	74
2	2	11	71
2	2	13	68
2	2	15	65
2	2	17	62
2	2	19	59
2	2	21	56
2	2	23	53
2	2	25	50
2	2	27	47
2	2	29	44
2	2	31	41
2	2	33	38
2	2	35	35
2	2	37	32
2	2	39	29
2	2	41	26
2	2	43	23
2	2	45	20
2	2	47	17
2	2	49	14
2	2	51	11
2	2	53	8
2	2	55	5
2	2	57	2
2	3	0	84
2	3	2	81
2	3	4	78
2	3	6	75
2	3	8	72
2	3	10	69
2	3	12	66
2	3	14	63
2	3	16	60
2	3	18	57
2	3	20	54
2	3	22	51

Aire Ard	Aire Tuise	Bo Aire	Flesach
2	3	24	48
2	3	26	45
2	3	28	42
2	3	30	39
2	3	32	36
2	3	34	33
2	3	36	30
2	3	38	27
2	3	40	24
2	3	42	21
2	3	44	18
2	3	46	15
2	3	48	12
2	3	50	9
2	3	52	6
2	3	54	3
2	3	56	0
2	4	1	79
2	4	3	76
2	4	5	73
2	4	7	70
2	4	9	67
2	4	11	64
2	4	13	61
2	4	15	58
2	4	17	55
2	4	19	52
2	4	21	49
2	4	23	46
2	4	25	43
2	4	27	40
2	4	29	37
2	4	31	34
2	4	33	31
2	4	35	28
2	4	37	25
2	4	39	22
2	4	41	19
2	4	43	16
2	4	45	13

Aire Ard	Aire Tuise	Bo Aire	Flesach
2	4	47	10
2	4	49	7
2	4	51	4
2	4	53	1
2	5	0	77
2	5	2	74
2	5	4	71
2	5	6	68
2	5	8	65
2	5	10	62
2	5	12	59
2	5	14	56
2	5	16	53
2	5	18	50
2	5	20	47
2	5	22	44
2	5	24	41
2	5	26	38
2	5	28	35
2	5	30	32
2	5	32	29
2	5	34	26
2	5	36	23
2	5	38	20
2	5	40	17
2	5	42	14
2	5	44	11
2	5	46	8
2	5	48	5
2	5	50	2
2	6	1	72
2	6	3	69
2	6	5	66
2	6	7	63
2	6	9	60
2	6	11	57
2	6	13	54
2	6	15	51
2	6	17	48
2	6	19	45

Aire Ard	Aire Tuise	Bo Aire	Flesach
2	6	21	42
2	6	23	39
2	6	25	36
2	6	27	33
2	6	29	30
2	6	31	27
2	6	33	24
2	6	35	21
2	6	37	18
2	6	39	15
2	6	41	12
2	6	43	9
2	6	45	6
2	6	47	3
2	6	49	0
2	7	0	70
2	7	2	67
2	7	4	64
2	7	6	61
2	7	8	58
2	7	10	55
2	7	12	52
2	7	14	49
2	7	16	46
2	7	18	43
2	7	20	40
2	7	22	37
2	7	24	34
2	7	26	31
2	7	28	28
2	7	30	25
2	7	32	22
2	7	34	19
2	7	36	16
2	7	38	13
2	7	40	10
2	7	42	7
2	7	44	4
2	7	46	1
2	8	1	65

Aire Ard	Aire Tuise	Bo Aire	Flesach
2	8	3	62
2	8	5	59
2	8	7	56
2	8	9	53
2	8	11	50
2	8	13	47
2	8	15	44
2	8	17	41
2	8	19	38
2	8	21	35
2	8	23	32
2	8	25	29
2	8	27	26
2	8	29	23
2	8	31	20
2	8	33	17
2	8	35	14
2	8	37	11
2	8	39	8
2	8	41	5
2	8	43	2
2	9	0	63
2	9	2	60
2	9	4	57
2	9	6	54
2	9	8	51
2	9	10	48
2	9	12	45
2	9	14	42
2	9	16	39
2	9	18	36
2	9	20	33
2	9	22	30
2	9	24	27
2	9	26	24
2	9	28	21
2	9	30	18
2	9	32	15
2	9	34	12
2	9	36	9

Aire Ard	Aire Tuise	Bo Aire	Flesach
2	9	38	6
2	9	40	3
2	9	42	0
2	10	1	58
2	10	3	55
2	10	5	52
2	10	7	49
2	10	9	46
2	10	11	43
2	10	13	40
2	10	15	37
2	10	17	34
2	10	19	31
2	10	21	28
2	10	23	25
2	10	25	22
2	10	27	19
2	10	29	16
2	10	31	13
2	10	33	10
2	10	35	7
2	10	37	4
2	10	39	1
2	11	0	56
2	11	2	53
2	11	4	50
2	11	6	47
2	11	8	44
2	11	10	41
2	11	12	38
2	11	14	35
2	11	16	32
2	11	18	29
2	11	20	26
2	11	22	23
2	11	24	20
2	11	26	17
2	11	28	14
2	11	30	11
2	11	32	8

Aire Ard	Aire Tuise	Bo Aire	Flesach
2	11	34	5
2	11	36	2
2	12	1	51
2	12	3	48
2	12	5	45
2	12	7	42
2	12	9	39
2	12	11	36
2	12	13	33
2	12	15	30
2	12	17	27
2	12	19	24
2	12	21	21
2	12	23	18
2	12	25	15
2	12	27	12
2	12	29	9
2	12	31	6
2	12	33	3
2	12	35	0
2	13	0	49
2	13	2	46
2	13	4	43
2	13	6	40
2	13	8	37
2	13	10	34
2	13	12	31
2	13	14	28
2	13	16	25
2	13	18	22
2	13	20	19
2	13	22	16
2	13	24	13
2	13	26	10
2	13	28	7
2	13	30	4
2	13	32	1
2	14	1	44
2	14	3	41
2	14	5	38

Aire Ard	Aire Tuise	Bo Aire	Flesach
2	14	7	35
2	14	9	32
2	14	11	29
2	14	13	26
2	14	15	23
2	14	17	20
2	14	19	17
2	14	21	14
2	14	23	11
2	14	25	8
2	14	27	5
2	14	29	2
2	15	0	42
2	15	2	39
2	15	4	36
2	15	6	33
2	15	8	30
2	15	10	27
2	15	12	24
2	15	14	21
2	15	16	18
2	15	18	15
2	15	20	12
2	15	22	9
2	15	24	6
2	15	26	3
2	15	28	0
2	16	1	37
2	16	3	34
2	16	5	31
2	16	7	28
2	16	9	25
2	16	11	22
2	16	13	19
2	16	15	16
2	16	17	13
2	16	19	10
2	16	21	7
2	16	23	4
2	16	25	1

Aire Ard	Aire Tuise	Bo Aire	Flesach
2	17	0	35
2	17	2	32
2	17	4	29
2	17	6	26
2	17	8	23
2	17	10	20
2	17	12	17
2	17	14	14
2	17	16	11
2	17	18	8
2	17	20	5
2	17	22	2
2	18	1	30
2	18	3	27
2	18	5	24
2	18	7	21
2	18	9	18
2	18	11	15
2	18	13	12
2	18	15	9
2	18	17	6
2	18	19	3
2	18	21	0
2	19	0	28
2	19	2	25
2	19	4	22
2	19	6	19
2	19	8	16
2	19	10	13
2	19	12	10
2	19	14	7
2	19	16	4
2	19	18	1
2	20	1	23
2	20	3	20
2	20	5	17
2	20	7	14
2	20	9	11
2	20	11	8
2	20	13	5

Aire Ard	Aire Tuise	Bo Aire	Flesach
2	20	15	2
2	21	0	21
2	21	2	18
2	21	4	15
2	21	6	12
2	21	8	9
2	21	10	6
2	21	12	3
2	21	14	0
2	22	1	16
2	22	3	13
2	22	5	10
2	22	7	7
2	22	9	4
2	22	11	1
2	23	0	14
2	23	2	11
2	23	4	8
2	23	6	5
2	23	8	2
2	24	1	9
2	24	3	6
2	24	5	3
2	24	7	0
2	25	0	7
2	25	2	4
2	25	4	1
2	26	1	2
2	27	0	0
4	0	0	84
4	0	2	81
4	0	4	78
4	0	6	75
4	0	8	72
4	0	10	69
4	0	12	66
4	0	14	63
4	0	16	60
4	0	18	57
4	0	20	54

Aire Ard	Aire Tuise	Bo Aire	Flesach
4	0	22	51
4	0	24	48
4	0	26	45
4	0	28	42
4	0	30	39
4	0	32	36
4	0	34	33
4	0	36	30
4	0	38	27
4	0	40	24
4	0	42	21
4	0	44	18
4	0	46	15
4	0	48	12
4	0	50	9
4	0	52	6
4	0	54	3
4	0	56	0
4	1	1	79
4	1	3	76
4	1	5	73
4	1	7	70
4	1	9	67
4	1	11	64
4	1	13	61
4	1	15	58
4	1	17	55
4	1	19	52
4	1	21	49
4	1	23	46
4	1	25	43
4	1	27	40
4	1	29	37
4	1	31	34
4	1	33	31
4	1	35	28
4	1	37	25
4	1	39	22
4	1	41	19
4	1	43	16

Aire Ard	Aire Tuise	Bo Aire	Flesach
4	1	45	13
4	1	47	10
4	1	49	7
4	1	51	4
4	1	53	1
4	2	0	77
4	2	2	74
4	2	4	71
4	2	6	68
4	2	8	65
4	2	10	62
4	2	12	59
4	2	14	56
4	2	16	53
4	2	18	50
4	2	20	47
4	2	22	44
4	2	24	41
4	2	26	38
4	2	28	35
4	2	30	32
4	2	32	29
4	2	34	26
4	2	36	23
4	2	38	20
4	2	40	17
4	2	42	14
4	2	44	11
4	2	46	8
4	2	48	5
4	2	50	2
4	3	1	72
4	3	3	69
4	3	5	66
4	3	7	63
4	3	9	60
4	3	11	57
4	3	13	54
4	3	15	51
4	3	17	48

Aire Ard	Aire Tuise	Bo Aire	Flesach
4	3	19	45
4	3	21	42
4	3	23	39
4	3	25	36
4	3	27	33
4	3	29	30
4	3	31	27
4	3	33	24
4	3	35	21
4	3	37	18
4	3	39	15
4	3	41	12
4	3	43	9
4	3	45	6
4	3	47	3
4	3	49	0
4	4	0	70
4	4	2	67
4	4	4	64
4	4	6	61
4	4	8	58
4	4	10	55
4	4	12	52
4	4	14	49
4	4	16	46
4	4	18	43
4	4	20	40
4	4	22	37
4	4	24	34
4	4	26	31
4	4	28	28
4	4	30	25
4	4	32	22
4	4	34	19
4	4	36	16
4	4	38	13
4	4	40	10
4	4	42	7
4	4	44	4
4	4	46	1

Aire Ard	Aire Tuise	Bo Aire	Flesach
4	5	1	65
4	5	3	62
4	5	5	59
4	5	7	56
4	5	9	53
4	5	11	50
4	5	13	47
4	5	15	44
4	5	17	41
4	5	19	38
4	5	21	35
4	5	23	32
4	5	25	29
4	5	27	26
4	5	29	23
4	5	31	20
4	5	33	17
4	5	35	14
4	5	37	11
4	5	39	8
4	5	41	5
4	5	43	2
4	6	0	63
4	6	2	60
4	6	4	57
4	6	6	54
4	6	8	51
4	6	10	48
4	6	12	45
4	6	14	42
4	6	16	39
4	6	18	36
4	6	20	33
4	6	22	30
4	6	24	27
4	6	26	24
4	6	28	21
4	6	30	18
4	6	32	15
4	6	34	12

Aire Ard	Aire Tuise	Bo Aire	Flesach
4	6	36	9
4	6	38	6
4	6	40	3
4	6	42	0
4	7	1	58
4	7	3	55
4	7	5	52
4	7	7	49
4	7	9	46
4	7	11	43
4	7	13	40
4	7	15	37
4	7	17	34
4	7	19	31
4	7	21	28
4	7	23	25
4	7	25	22
4	7	27	19
4	7	29	16
4	7	31	13
4	7	33	10
4	7	35	7
4	7	37	4
4	7	39	1
4	8	0	56
4	8	2	53
4	8	4	50
4	8	6	47
4	8	8	44
4	8	10	41
4	8	12	38
4	8	14	35
4	8	16	32
4	8	18	29
4	8	20	26
4	8	22	23
4	8	24	20
4	8	26	17
4	8	28	14
4	8	30	11

Aire Ard	Aire Tuise	Bo Aire	Flesach
4	8	32	8
4	8	34	5
4	8	36	2
4	9	1	51
4	9	3	48
4	9	5	45
4	9	7	42
4	9	9	39
4	9	11	36
4	9	13	33
4	9	15	30
4	9	17	27
4	9	19	24
4	9	21	21
4	9	23	18
4	9	25	15
4	9	27	12
4	9	29	9
4	9	31	6
4	9	33	3
4	9	35	0
4	10	0	49
4	10	2	46
4	10	4	43
4	10	6	40
4	10	8	37
4	10	10	34
4	10	12	31
4	10	14	28
4	10	16	25
4	10	18	22
4	10	20	19
4	10	22	16
4	10	24	13
4	10	26	10
4	10	28	7
4	10	30	4
4	10	32	1
4	11	1	44
4	11	3	41

Aire Ard	Aire Tuise	Bo Aire	Flesach
4	11	5	38
4	11	7	35
4	11	9	32
4	11	11	29
4	11	13	26
4	11	15	23
4	11	17	20
4	11	19	17
4	11	21	14
4	11	23	11
4	11	25	8
4	11	27	5
4	11	29	2
4	12	0	42
4	12	2	39
4	12	4	36
4	12	6	33
4	12	8	30
4	12	10	27
4	12	12	24
4	12	14	21
4	12	16	18
4	12	18	15
4	12	20	12
4	12	22	9
4	12	24	6
4	12	26	3
4	12	28	0
4	13	1	37
4	13	3	34
4	13	5	31
4	13	7	28
4	13	9	25
4	13	11	22
4	13	13	19
4	13	15	16
4	13	17	13
4	13	19	10
4	13	21	7
4	13	23	4

Aire Ard	Aire Tuise	Bo Aire	Flesach
4	13	25	1
4	14	0	35
4	14	2	32
4	14	4	29
4	14	6	26
4	14	8	23
4	14	10	20
4	14	12	17
4	14	14	14
4	14	16	11
4	14	18	8
4	14	20	5
4	14	22	2
4	15	1	30
4	15	3	27
4	15	5	24
4	15	7	21
4	15	9	18
4	15	11	15
4	15	13	12
4	15	15	9
4	15	17	6
4	15	19	3
4	15	21	0
4	16	0	28
4	16	2	25
4	16	4	22
4	16	6	19
4	16	8	16
4	16	10	13
4	16	12	10
4	16	14	7
4	16	16	4
4	16	18	1
4	17	1	23
4	17	3	20
4	17	5	17
4	17	7	14
4	17	9	11
4	17	11	8

Aire Ard	Aire Tuise	Bo Aire	Flesach
4	17	13	5
4	17	15	2
4	18	0	21
4	18	2	18
4	18	4	15
4	18	6	12
4	18	8	9
4	18	10	6
4	18	12	3
4	18	14	0
4	19	1	16
4	19	3	13
4	19	5	10
4	19	7	7
4	19	9	4
4	19	11	1
4	20	0	14
4	20	2	11
4	20	4	8
4	20	6	5
4	20	8	2
4	21	1	9
4	21	3	6
4	21	5	3
4	21	7	0
4	22	0	7
4	22	2	4
4	22	4	1
4	23	1	2
4	24	0	0
6	0	1	72
6	0	3	69
6	0	5	66
6	0	7	63
6	0	9	60
6	0	11	57
6	0	13	54
6	0	15	51
6	0	17	48
6	0	19	45

Aire Ard	Aire Tuise	Bo Aire	Flesach
6	0	21	42
6	0	23	39
6	0	25	36
6	0	27	33
6	0	29	30
6	0	31	27
6	0	33	24
6	0	35	21
6	0	37	18
6	0	39	15
6	0	41	12
6	0	43	9
6	0	45	6
6	0	47	3
6	0	49	0
6	1	0	70
6	1	2	67
6	1	4	64
6	1	6	61
6	1	8	58
6	1	10	55
6	1	12	52
6	1	14	49
6	1	16	46
6	1	18	43
6	1	20	40
6	1	22	37
6	1	24	34
6	1	26	31
6	1	28	28
6	1	30	25
6	1	32	22
6	1	34	19
6	1	36	16
6	1	38	13
6	1	40	10
6	1	42	7
6	1	44	4
6	1	46	1
6	2	1	65

Aire Ard	Aire Tuise	Bo Aire	Flesach
6	2	3	62
6	2	5	59
6	2	7	56
6	2	9	53
6	2	11	50
6	2	13	47
6	2	15	44
6	2	17	41
6	2	19	38
6	2	21	35
6	2	23	32
6	2	25	29
6	2	27	26
6	2	29	23
6	2	31	20
6	2	33	17
6	2	35	14
6	2	37	11
6	2	39	8
6	2	41	5
6	2	43	2
6	3	0	63
6	3	2	60
6	3	4	57
6	3	6	54
6	3	8	51
6	3	10	48
6	3	12	45
6	3	14	42
6	3	16	39
6	3	18	36
6	3	20	33
6	3	22	30
6	3	24	27
6	3	26	24
6	3	28	21
6	3	30	18
6	3	32	15
6	3	34	12
6	3	36	9

Aire Ard	Aire Tuise	Bo Aire	Flesach
6	3	38	6
6	3	40	3
6	3	42	0
6	4	1	58
6	4	3	55
6	4	5	52
6	4	7	49
6	4	9	46
6	4	11	43
6	4	13	40
6	4	15	37
6	4	17	34
6	4	19	31
6	4	21	28
6	4	23	25
6	4	25	22
6	4	27	19
6	4	29	16
6	4	31	13
6	4	33	10
6	4	35	7
6	4	37	4
6	4	39	1
6	5	0	56
6	5	2	53
6	5	4	50
6	5	6	47
6	5	8	44
6	5	10	41
6	5	12	38
6	5	14	35
6	5	16	32
6	5	18	29
6	5	20	26
6	5	22	23
6	5	24	20
6	5	26	17
6	5	28	14
6	5	30	11
6	5	32	8

Aire Ard	Aire Tuise	Bo Aire	Flesach
6	5	34	5
6	5	36	2
6	6	1	51
6	6	3	48
6	6	5	45
6	6	7	42
6	6	9	39
6	6	11	36
6	6	13	33
6	6	15	30
6	6	17	27
6	6	19	24
6	6	21	21
6	6	23	18
6	6	25	15
6	6	27	12
6	6	29	9
6	6	31	6
6	6	33	3
6	6	35	0
6	7	0	49
6	7	2	46
6	7	4	43
6	7	6	40
6	7	8	37
6	7	10	34
6	7	12	31
6	7	14	28
6	7	16	25
6	7	18	22
6	7	20	19
6	7	22	16
6	7	24	13
6	7	26	10
6	7	28	7
6	7	30	4
6	7	32	1
6	8	1	44
6	8	3	41
6	8	5	38

Aire Ard	Aire Tuise	Bo Aire	Flesach
6	8	7	35
6	8	9	32
6	8	11	29
6	8	13	26
6	8	15	23
6	8	17	20
6	8	19	17
6	8	21	14
6	8	23	11
6	8	25	8
6	8	27	5
6	8	29	2
6	9	0	42
6	9	2	39
6	9	4	36
6	9	6	33
6	9	8	30
6	9	10	27
6	9	12	24
6	9	14	21
6	9	16	18
6	9	18	15
6	9	20	12
6	9	22	9
6	9	24	6
6	9	26	3
6	9	28	0
6	10	1	37
6	10	3	34
6	10	5	31
6	10	7	28
6	10	9	25
6	10	11	22
6	10	13	19
6	10	15	16
6	10	17	13
6	10	19	10
6	10	21	7
6	10	23	4
6	10	25	1

Aire Ard	Aire Tuise	Bo Aire	Flesach
6	11	0	35
6	11	2	32
6	11	4	29
6	11	6	26
6	11	8	23
6	11	10	20
6	11	12	17
6	11	14	14
6	11	16	11
6	11	18	8
6	11	20	5
6	11	22	2
6	12	1	30
6	12	3	27
6	12	5	24
6	12	7	21
6	12	9	18
6	12	11	15
6	12	13	12
6	12	15	9
6	12	17	6
6	12	19	3
6	12	21	0
6	13	0	28
6	13	2	25
6	13	4	22
6	13	6	19
6	13	8	16
6	13	10	13
6	13	12	10
6	13	14	7
6	13	16	4
6	13	18	1
6	14	1	23
6	14	3	20
6	14	5	17
6	14	7	14
6	14	9	11
6	14	11	8
6	14	13	5

Aire Ard	Aire Tuise	Bo Aire	Flesach
6	14	15	2
6	15	0	21
6	15	2	18
6	15	4	15
6	15	6	12
6	15	8	9
6	15	10	6
6	15	12	3
6	15	14	0
6	16	1	16
6	16	3	13
6	16	5	10
6	16	7	7
6	16	9	4
6	16	11	1
6	17	0	14
6	17	2	11
6	17	4	8
6	17	6	5
6	17	8	2
6	18	1	9
6	18	3	6
6	18	5	3
6	18	7	0
6	19	0	7
6	19	2	4
6	19	4	1
6	20	1	2
6	21	0	0
8	0	0	63
8	0	2	60
8	0	4	57
8	0	6	54
8	0	8	51
8	0	10	48
8	0	12	45
8	0	14	42
8	0	16	39
8	0	18	36
8	0	20	33

Aire Ard	Aire Tuise	Bo Aire	Flesach
8	0	22	30
8	0	24	27
8	0	26	24
8	0	28	21
8	0	30	18
8	0	32	15
8	0	34	12
8	0	36	9
8	0	38	6
8	0	40	3
8	0	42	0
8	1	1	58
8	1	3	55
8	1	5	52
8	1	7	49
8	1	9	46
8	1	11	43
8	1	13	40
8	1	15	37
8	1	17	34
8	1	19	31
8	1	21	28
8	1	23	25
8	1	25	22
8	1	27	19
8	1	29	16
8	1	31	13
8	1	33	10
8	1	35	7
8	1	37	4
8	1	39	1
8	2	0	56
8	2	2	53
8	2	4	50
8	2	6	47
8	2	8	44
8	2	10	41
8	2	12	38
8	2	14	35
8	2	16	32

Aire Ard	Aire Tuise	Bo Aire	Flesach
8	2	18	29
8	2	20	26
8	2	22	23
8	2	24	20
8	2	26	17
8	2	28	14
8	2	30	11
8	2	32	8
8	2	34	5
8	2	36	2
8	3	1	51
8	3	3	48
8	3	5	45
8	3	7	42
8	3	9	39
8	3	11	36
8	3	13	33
8	3	15	30
8	3	17	27
8	3	19	24
8	3	21	21
8	3	23	18
8	3	25	15
8	3	27	12
8	3	29	9
8	3	31	6
8	3	33	3
8	3	35	0
8	4	0	49
8	4	2	46
8	4	4	43
8	4	6	40
8	4	8	37
8	4	10	34
8	4	12	31
8	4	14	28
8	4	16	25
8	4	18	22
8	4	20	19
8	4	22	16

Aire Ard	Aire Tuise	Bo Aire	Flesach
8	4	24	13
8	4	26	10
8	4	28	7
8	4	30	4
8	4	32	1
8	5	1	44
8	5	3	41
8	5	5	38
8	5	7	35
8	5	9	32
8	5	11	29
8	5	13	26
8	5	15	23
8	5	17	20
8	5	19	17
8	5	21	14
8	5	23	11
8	5	25	8
8	5	27	5
8	5	29	2
8	6	0	42
8	6	2	39
8	6	4	36
8	6	6	33
8	6	8	30
8	6	10	27
8	6	12	24
8	6	14	21
8	6	16	18
8	6	18	15
8	6	20	12
8	6	22	9
8	6	24	6
8	6	26	3
8	6	28	0
8	7	1	37
8	7	3	34
8	7	5	31
8	7	7	28
8	7	9	25

Aire Ard	Aire Tuise	Bo Aire	Flesach
8	7	11	22
8	7	13	19
8	7	15	16
8	7	17	13
8	7	19	10
8	7	21	7
8	7	23	4
8	7	25	1
8	8	0	35
8	8	2	32
8	8	4	29
8	8	6	26
8	8	8	23
8	8	10	20
8	8	12	17
8	8	14	14
8	8	16	11
8	8	18	8
8	8	20	5
8	8	22	2
8	9	1	30
8	9	3	27
8	9	5	24
8	9	7	21
8	9	9	18
8	9	11	15
8	9	13	12
8	9	15	9
8	9	17	6
8	9	19	3
8	9	21	0
8	10	0	28
8	10	2	25
8	10	4	22
8	10	6	19
8	10	8	16
8	10	10	13
8	10	12	10
8	10	14	7
8	10	16	4

Aire Ard	Aire Tuise	Bo Aire	Flesach
8	10	18	1
8	11	1	23
8	11	3	20
8	11	5	17
8	11	7	14
8	11	9	11
8	11	11	8
8	11	13	5
8	11	15	2
8	12	0	21
8	12	2	18
8	12	4	15
8	12	6	12
8	12	8	9
8	12	10	6
8	12	12	3
8	12	14	0
8	13	1	16
8	13	3	13
8	13	5	10
8	13	7	7
8	13	9	4
8	13	11	1
8	14	0	14
8	14	2	11
8	14	4	8
8	14	6	5
8	14	8	2
8	15	1	9
8	15	3	6
8	15	5	3
8	15	7	0
8	16	0	7
8	16	2	4
8	16	4	1
8	17	1	2
8	18	0	0
10	0	1	51
10	0	3	48
10	0	5	45

Aire Ard	Aire Tuise	Bo Aire	Flesach
10	0	7	42
10	0	9	39
10	0	11	36
10	0	13	33
10	0	15	30
10	0	17	27
10	0	19	24
10	0	21	21
10	0	23	18
10	0	25	15
10	0	27	12
10	0	29	9
10	0	31	6
10	0	33	3
10	0	35	0
10	1	0	49
10	1	2	46
10	1	4	43
10	1	6	40
10	1	8	37
10	1	10	34
10	1	12	31
10	1	14	28
10	1	16	25
10	1	18	22
10	1	20	19
10	1	22	16
10	1	24	13
10	1	26	10
10	1	28	7
10	1	30	4
10	1	32	1
10	2	1	44
10	2	3	41
10	2	5	38
10	2	7	35
10	2	9	32
10	2	11	29
10	2	13	26
10	2	15	23

Aire Ard	Aire Tuise	Bo Aire	Flesach
10	2	17	20
10	2	19	17
10	2	21	14
10	2	23	11
10	2	25	8
10	2	27	5
10	2	29	2
10	3	0	42
10	3	2	39
10	3	4	36
10	3	6	33
10	3	8	30
10	3	10	27
10	3	12	24
10	3	14	21
10	3	16	18
10	3	18	15
10	3	20	12
10	3	22	9
10	3	24	6
10	3	26	3
10	3	28	0
10	4	1	37
10	4	3	34
10	4	5	31
10	4	7	28
10	4	9	25
10	4	11	22
10	4	13	19
10	4	15	16
10	4	17	13
10	4	19	10
10	4	21	7
10	4	23	4
10	4	25	1
10	5	0	35
10	5	2	32
10	5	4	29
10	5	6	26
10	5	8	23

Aire Ard	Aire Tuise	Bo Aire	Flesach
10	5	10	20
10	5	12	17
10	5	14	14
10	5	16	11
10	5	18	8
10	5	20	5
10	5	22	2
10	6	1	30
10	6	3	27
10	6	5	24
10	6	7	21
10	6	9	18
10	6	11	15
10	6	13	12
10	6	15	9
10	6	17	6
10	6	19	3
10	6	21	0
10	7	0	28
10	7	2	25
10	7	4	22
10	7	6	19
10	7	8	16
10	7	10	13
10	7	12	10
10	7	14	7
10	7	16	4
10	7	18	1
10	8	1	23
10	8	3	20
10	8	5	17
10	8	7	14
10	8	9	11
10	8	11	8
10	8	13	5
10	8	15	2
10	9	0	21
10	9	2	18
10	9	4	15
10	9	6	12

Aire Ard	Aire Tuise	Bo Aire	Flesach
10	9	8	9
10	9	10	6
10	9	12	3
10	9	14	0
10	10	1	16
10	10	3	13
10	10	5	10
10	10	7	7
10	10	9	4
10	10	11	1
10	11	0	14
10	11	2	11
10	11	4	8
10	11	6	5
10	11	8	2
10	12	1	9
10	12	3	6
10	12	5	3
10	12	7	0
10	13	0	7
10	13	2	4
10	13	4	1
10	14	1	2
10	15	0	0
12	0	0	42
12	0	2	39
12	0	4	36
12	0	6	33
12	0	8	30
12	0	10	27
12	0	12	24
12	0	14	21
12	0	16	18
12	0	18	15
12	0	20	12
12	0	22	9
12	0	24	6
12	0	26	3
12	0	28	0
12	1	1	37

Aire Ard	Aire Tuise	Bo Aire	Flesach
12	1	3	34
12	1	5	31
12	1	7	28
12	1	9	25
12	1	11	22
12	1	13	19
12	1	15	16
12	1	17	13
12	1	19	10
12	1	21	7
12	1	23	4
12	1	25	1
12	2	0	35
12	2	2	32
12	2	4	29
12	2	6	26
12	2	8	23
12	2	10	20
12	2	12	17
12	2	14	14
12	2	16	11
12	2	18	8
12	2	20	5
12	2	22	2
12	3	1	30
12	3	3	27
12	3	5	24
12	3	7	21
12	3	9	18
12	3	11	15
12	3	13	12
12	3	15	9
12	3	17	6
12	3	19	3
12	3	21	0
12	4	0	28
12	4	2	25
12	4	4	22
12	4	6	19
12	4	8	16

Aire Ard	Aire Tuise	Bo Aire	Flesach
12	4	10	13
12	4	12	10
12	4	14	7
12	4	16	4
12	4	18	1
12	5	1	23
12	5	3	20
12	5	5	17
12	5	7	14
12	5	9	11
12	5	11	8
12	5	13	5
12	5	15	2
12	6	0	21
12	6	2	18
12	6	4	15
12	6	6	12
12	6	8	9
12	6	10	6
12	6	12	3
12	6	14	0
12	7	1	16
12	7	3	13
12	7	5	10
12	7	7	7
12	7	9	4
12	7	11	1
12	8	0	14
12	8	2	11
12	8	4	8
12	8	6	5
12	8	8	2
12	9	1	9
12	9	3	6
12	9	5	3
12	9	7	0
12	10	0	7
12	10	2	4
12	10	4	1
12	11	1	2

Aire Ard	Aire Tuise	Bo Aire	Flesach
12	12	0	0
14	0	1	30
14	0	3	27
14	0	5	24
14	0	7	21
14	0	9	18
14	0	11	15
14	0	13	12
14	0	15	9
14	0	17	6
14	0	19	3
14	0	21	0
14	1	0	28
14	1	2	25
14	1	4	22
14	1	6	19
14	1	8	16
14	1	10	13
14	1	12	10
14	1	14	7
14	1	16	4
14	1	18	1
14	2	1	23
14	2	3	20
14	2	5	17
14	2	7	14
14	2	9	11
14	2	11	8
14	2	13	5
14	2	15	2
14	3	0	21
14	3	2	18
14	3	4	15
14	3	6	12
14	3	8	9
14	3	10	6
14	3	12	3
14	3	14	0
14	4	1	16
14	4	3	13

Aire Ard	Aire Tuise	Bo Aire	Flesach
14	4	5	10
14	4	7	7
14	4	9	4
14	4	11	1
14	5	0	14
14	5	2	11
14	5	4	8
14	5	6	5
14	5	8	2
14	6	1	9
14	6	3	6
14	6	5	3
14	6	7	0
14	7	0	7
14	7	2	4
14	7	4	1
14	8	1	2
14	9	0	0
16	0	0	21
16	0	2	18
16	0	4	15
16	0	6	12
16	0	8	9
16	0	10	6
16	0	12	3
16	0	14	0
16	1	1	16
16	1	3	13
16	1	5	10
16	1	7	7
16	1	9	4
16	1	11	1
16	2	0	14
16	2	2	11
16	2	4	8
16	2	6	5
16	2	8	2
16	3	1	9
16	3	3	6
16	3	5	3

Aire Ard	Aire Tuise	Bo Aire	Flesach
16	3	7	0
16	4	0	7
16	4	2	4
16	4	4	1
16	5	1	2
16	6	0	0
18	0	1	9
18	0	3	6
18	0	5	3
18	0	7	0
18	1	0	7
18	1	2	4
18	1	4	1
18	2	1	2
18	3	0	0
20	0	0	0