



Coimisiún na Scrúduithe Stáit

Scrúdú an Teastais Shóisearaigh, 2015

Matamaitic

Páipéar 1 Gnáthleibhéal

Dé hAoine, 5 Meitheamh – Tráthnóna, 2:00 go dtí 4:00

300 marc

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| Scrúduimhir |
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| Stampa an ionaid |
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| Iomlán reatha | |
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| Don scrúdaitheoir | | | |
|-------------------|------|-----------|------|
| Ceist | Marc | Ceist | Marc |
| 1 | | 11 | |
| 2 | | 12 | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | Iomlán | |
| 9 | | Bónas | |
| 10 | | Móriomlán | |

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| Grád |
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Treoracha

Tá 12 cheist ar an scrúdpháipéar seo. Freagair **gach** ceist.

Ní gá go bhfuil na ceisteanna ar aon mharc. Moltar uasmhéid ama do gach ceist anseo chun cabhrú leat do chuid ama a roinnt go cuí le linn an scrúdaithe seo. Má chloíonn tú leis na hamanna seo, beidh thart ar 10 nóiméad fágtha agat chun súil a chaitheamh siar ar do chuid oibre.

Scríobh do chuid freagraí sna spásanna atá ann dóibh sa leabhrán seo. Is féidir go gcaillfidh tú marcanna mura ndéanfaidh tú é sin. Is féidir páipéar breise a iarraidh ar an bhfeitheoir. Lipéadaigh aon obair bhreise go soiléir le huimhir na ceiste agus leis an gcuid den cheist.

Tabharfaidh an feitheoir cóip den leabhrán *Foirmlí agus Táblaí* duit. Caithfidh tú é a thabhairt ar ais ag deireadh an scrúdaithe. Níl cead agat do chóip féin a thabhairt isteach sa scrúdú.

Caillfidh tú marcanna mura dtaispeántar go soiléir an obair riachtanach go léir.

Is féidir go gcaillfidh tú marcanna mura dtugtar na haonaid tomhais chuí sna freagraí, de réir mar a oireann.

Is féidir go gcaillfidh tú marcanna mura dtugtar na freagraí san fhoirm is simplí, de réir mar a oireann.

Scríobh déanamh agus múnla d'áireamhá(i)n anseo:

Ceist 1**(10 nóiméad an t-uasmhéid ama a mholtar)****(a)** Faigh luach gach ceann acu seo a leanas.

(i) $2 \cdot 5 - 1 \cdot 5 \times 0 \cdot 1$

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(ii) $\sqrt{5+1 \cdot 25}$

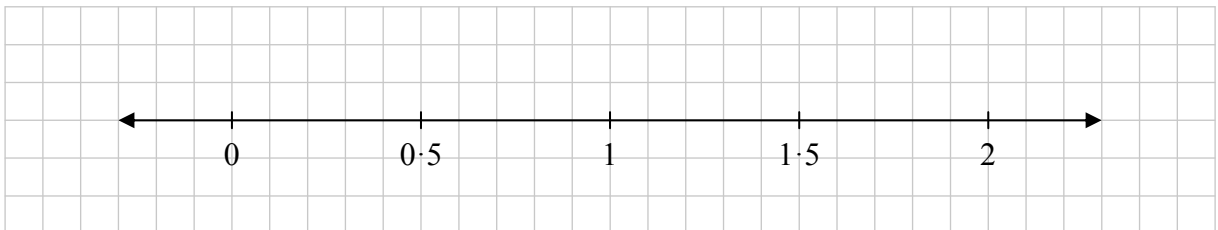
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(iii) $(-2)^3$

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(b) Taispeáin gach ceann de na huimhreacha seo a leanas ar an uimhirlíne thíos.
Cuir lipéad soléir ar gach ceann díobh.

0·1, $\frac{1}{2}$, 1·7

**(c)** **(i)** Scáthaigh $\frac{1}{3}$ den stiall seo thíos.

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(ii) Líon isteach an dá spás bhána thíos, chun dhá chodán a thaispeáint a bhfuil a luach cothrom le $\frac{1}{3}$.

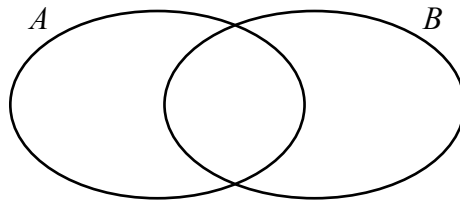
$$\frac{1}{3} = \frac{\boxed{}}{6} = \frac{4}{\boxed{}}$$

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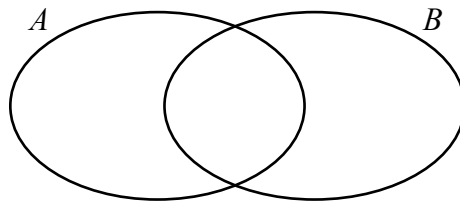
Ceist 2

(5 nóiméad an t-uasmhéid ama a mholtar)

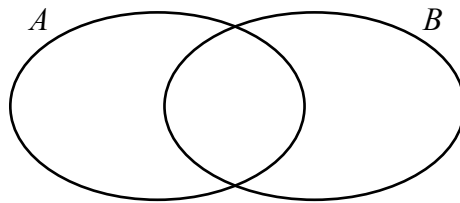
(a) Ar an léaráid Venn thíos, **scáthaigh** an réigiún a léiríonn $A \cap B$.



(b) Ar an léaráid Venn thíos, **scáthaigh** an réigiún a léiríonn $A \cup B$.



(c) Ar an léaráid Venn thíos, **scáthaigh** an réigiún a léiríonn $(A \cup B) \setminus (A \cap B)$.



(d) Cuir tic (✓) sa bhosca ceart chun a thaispeáint cén ceann acu seo a léiríonn na baill atá in A ach nach bhfuil in B .

$B \setminus A$

$A + B$

$A \setminus B$

Ceist 3

(10 nóiméad an t-uasmhéid ama a mholtar)

Ba mhaith le Dónall rothar a cheannach. Cosnaíonn an rothar €320, de ghnáth. Tá “tairiscint speisialta” ar an rothar i dtí shiopa éagsúla.

- (a) Tá **Siopa A** ag tairiscint **laghdú 10%** ar ghnáthphraghas an rothair. Líon isteach an tábla chun praghas an rothair, de réir “tairiscint speisialta” an tsiopa sin, a léiriú.

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| Gnáthphraghas: | €320 | |
| Praghas de réir “tairiscint speisialta”: | | |

- (b) Is éard atá **Siopa B** ag tairiscint ná gnáthphraghas an rothair a **laghdú de $\frac{1}{4}$** . Líon isteach an tábla chun praghas an rothair, de réir “tairiscint speisialta” an tsiopa sin, a léiriú.

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| Gnáthphraghas: | €320 | |
| Praghas de réir “tairiscint speisialta”: | | |

- (c) I **Siopa C** is éard is féidir le Dónall a íoc ná **€60 anois, agus €20 ag deireadh gach míosa go ceann 12 mhí**. Líon isteach an tábla chun praghas an rothair, de réir “tairiscint speisialta” an tsiopa sin, a léiriú.

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| Gnáthphraghas: | €320 | |
| Praghas de réir “tairiscint speisialta”: | | |

- (d) Cé acu ceann de na siopaí **A, B**, nó **C** ar chóir do Dhónall an rothar a cheannach ann, dar leat? Tabhair cúis le do fhreagra.

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| Freagra: | |
| Cúis: | |

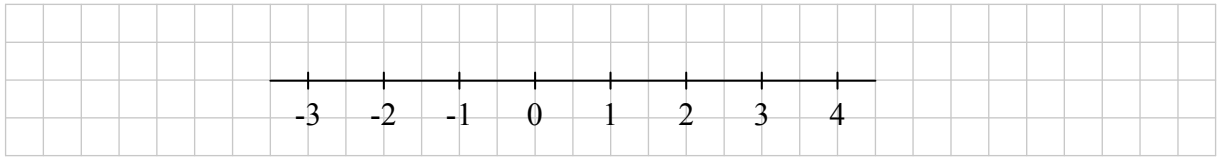
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Ceist 7

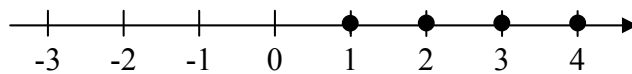
(5 nóiméad an t-uasmhéid ama a mholtar)

(a) Graf an éagothromóid seo a leanas ar an uimhirlíne thíos.

$$x \leq 2, \quad x \in \mathbb{R}$$



(b) Cuir tic (✓) sa bhosca ceart sa tábla chun a thaispeáint cé acu ceann de na héagothromóidí atá graftha ar an uimhirlíne thíos.



| Éagothromóid | Cuir tic (✓) i mbosca amháin |
|------------------------------------|------------------------------|
| $x \leq 1, \quad x \in \mathbb{N}$ | |
| $x \geq 1, \quad x \in \mathbb{N}$ | |
| $x > 1, \quad x \in \mathbb{N}$ | |
| $x < 1, \quad x \in \mathbb{N}$ | |

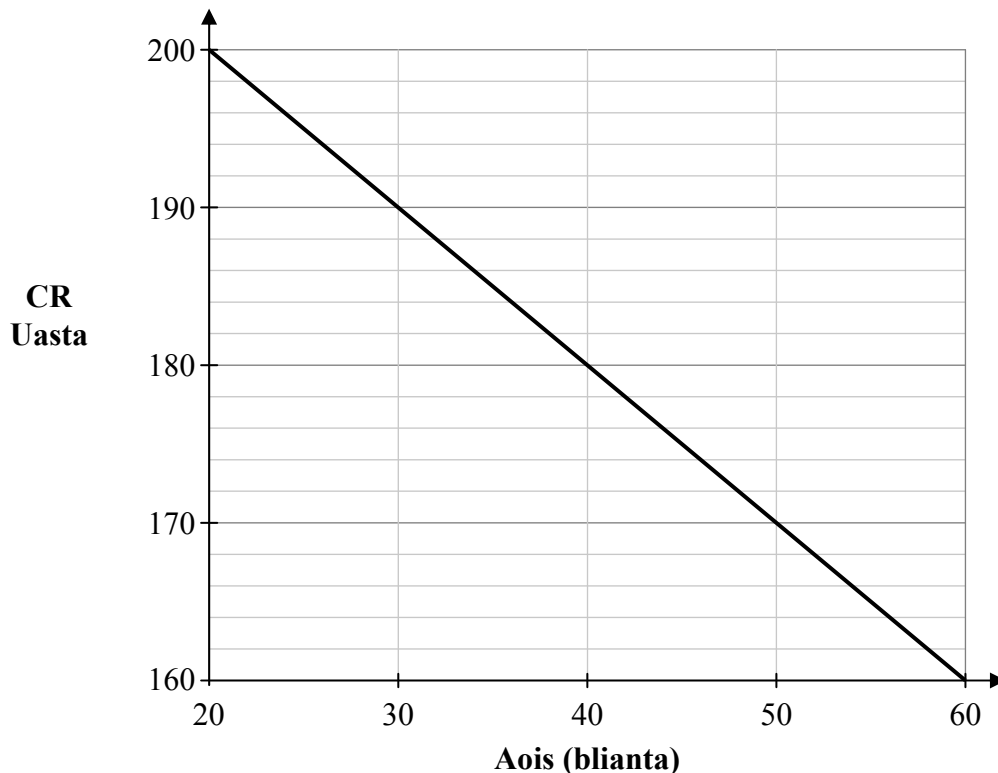
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Ceist 10

(15 nóiméad an t-uasmhéid ama a mholtar)

Tá trí fhoirmle éagsúla in úsáid i spórtlann chun do chroírata uasta (CR Uasta) a mheas, ag cur d'aois ina blianta san áireamh. Is féidir meastacháin éagsúla a fháil le foirmlí éagsúla.

Taispeántar an **chéad fhoirmle** sa ghráf thíos.



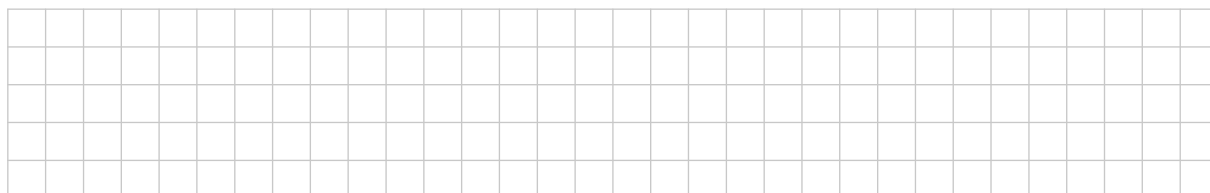
- (a)** Úsáid an graf thuas chun an CR Uasta a fháil do dhuine atá 30 bliain d’aois agus do dhuine atá 50 bliain d’aois. Taispeáin do chuid oibre ar an ngraf.

CR Uasta do 30 bliain =

CR Uasta do 50 bliain =

- (b)** Taispeántar thíos cuid den fhoirmle a thugann an graf sin. Líon isteach an uimhir atá in easnamh san fhoirmle.

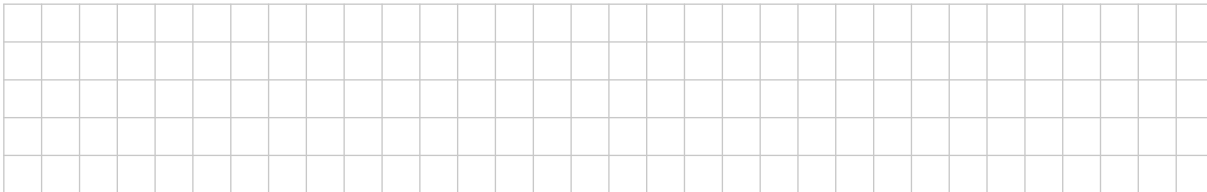
CR Uasta = lúide d’Aois.



Is í an **dara foirmle** chun CR Uasta a fháil ná:

$$\text{CR Uasta} = 210 \text{ léide Leath d'Aoise.}$$

(c) Úsáid an fhoirmle sin chun an CR Uasta a fháil i gcás duine atá 60 bliain d'aois.



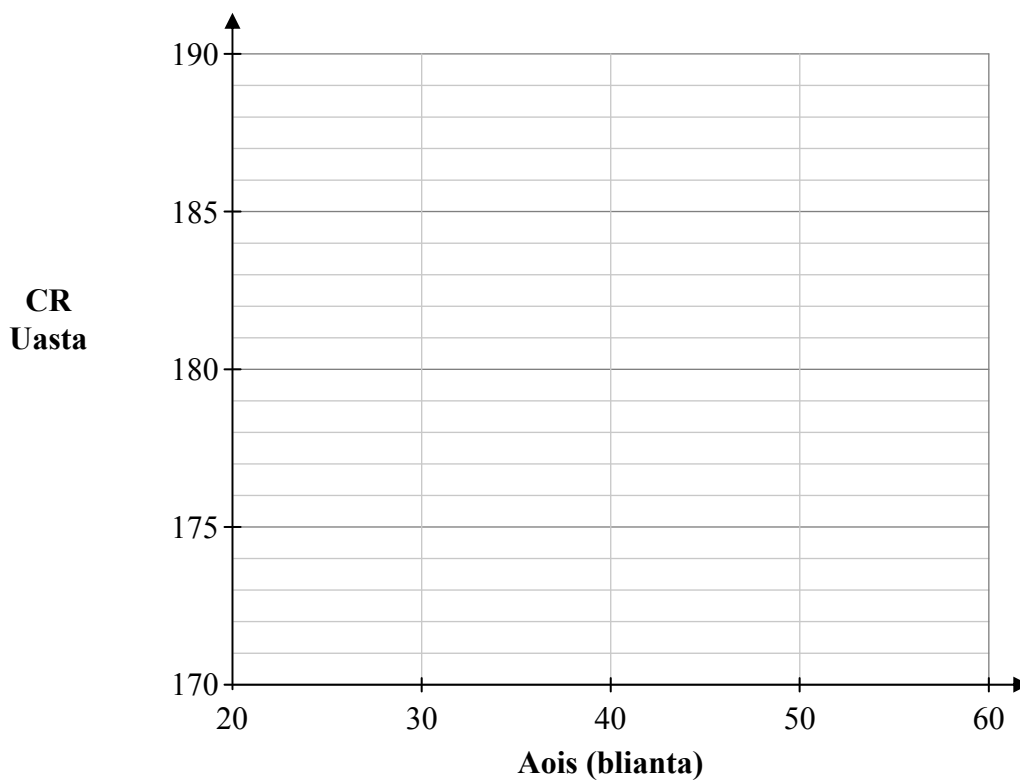
Taispeántar an **tríú foirmle** sa tábla ar dheis.
Is patrún **lineach** é an patrún sa cholún CR Uasta.

(d) Comhlánaigh an tábla.



| Aois (blianta) | CR Uasta |
|----------------|----------|
| 20 | 190 |
| 30 | 186 |
| 40 | |
| 50 | |
| 60 | |

(e) Agus na luachanna sa tábla á n-úsáid agat, tarraing graf ar an ngréille thíos chun an CR Uasta a léiriú do na haoiseanna go léir sa raon 20 bliain go dtí 60 bliain.

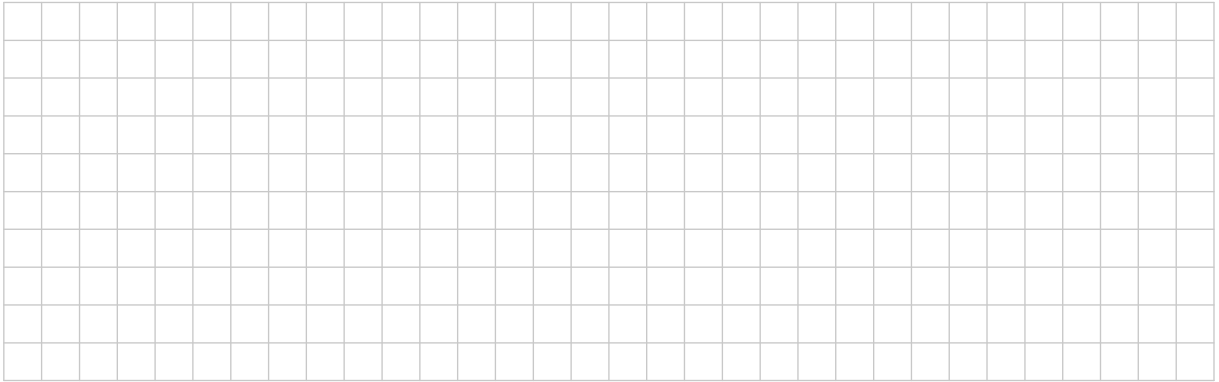


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Ceist 11

(10 nóiméad an t-uasmhéid ama a mholtar)

- (a) Réitigh an chothromóid $5x - 10 = 3x + 2$.

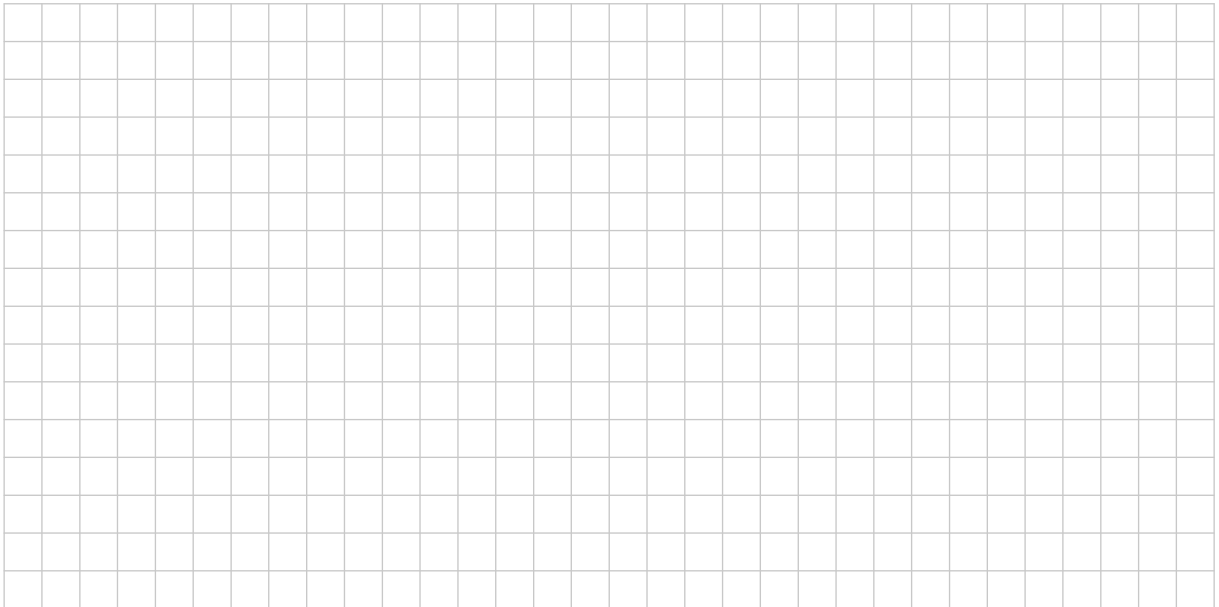


- (b) Deir Eoin go bhfuil $x = 4$ ina réiteach ar $x^2 - 2x - 8 = 0$.
Léirigh go bhfuil an ceart ag Eoin.



- (c) Réitigh na cothromóidí comhuaineacha seo:

$$\begin{aligned}x + y &= 11 \\x - y &= -5.\end{aligned}$$



Ceist 12**(10 nóiméad an t-uasmhéid ama a mholtar)**

Baineann Máirtín úsáid as na treoracha sa tábla thíos chun patrún uimhreacha a chruthú. Tá an chéad uimhir líonta isteach duit.

(a) **Comhlánaigh** an tábla.

| Treoir | An Chéad Uimhir | An Dara hUimhir | An Tríú hUimhir |
|----------------------|-----------------|-----------------|-----------------|
| An Uimhir Thosaigh | 5 | 6 | 7 |
| Iolraigh faoi 3 | 5×3 | | |
| Bain 5 ó do fhreagra | $15 - 5$ | | |
| Toradh | 10 | | |

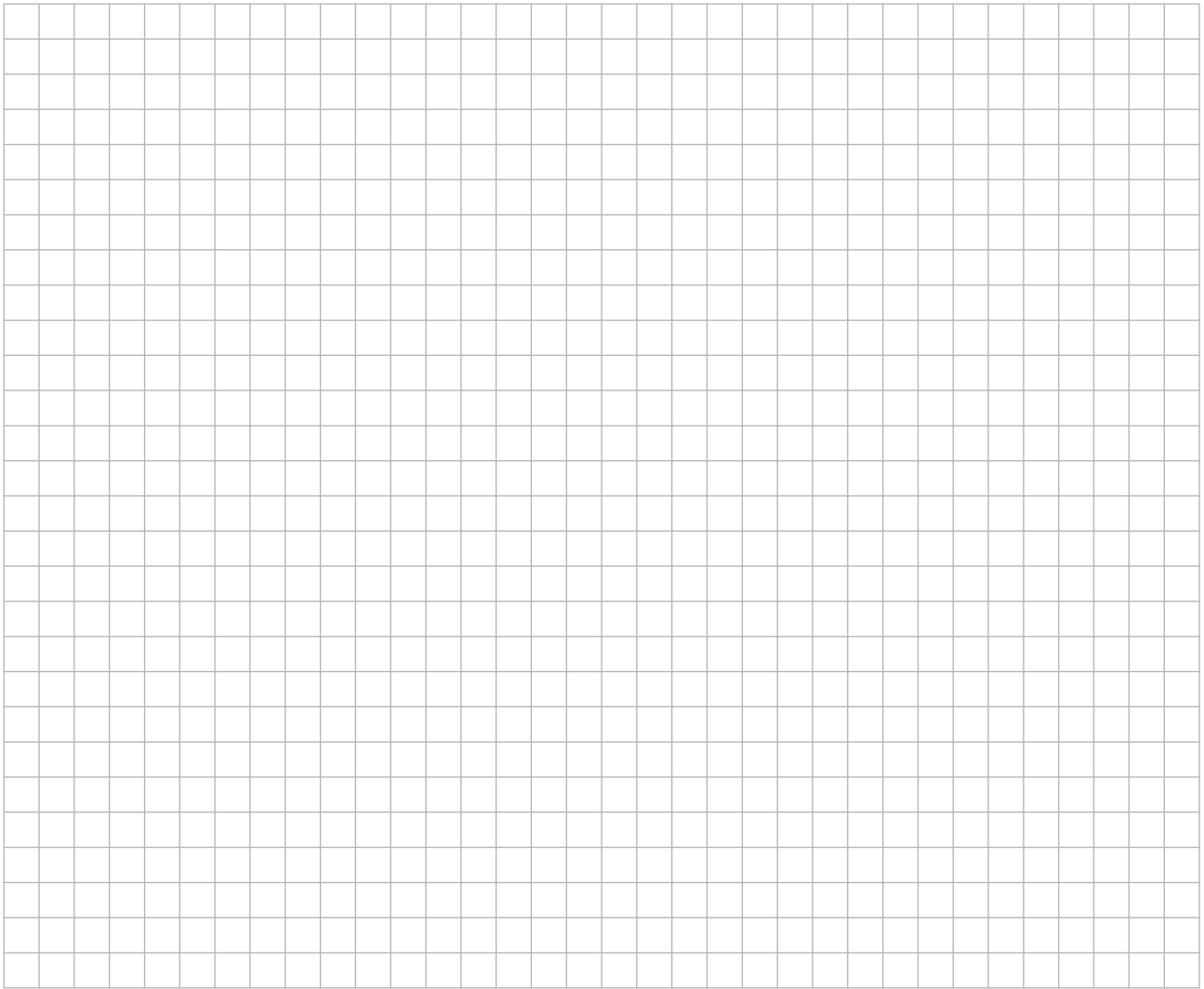
(b) Roghnaíonn Máirtín uimhir thosaigh agus nuair a leanann sé na treoracha faigheann sé 1 mar thoradh. Faigh an **uimhir thosaigh** a roghnaigh sé.

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(c) Nuair is í k an uimhir thosaigh, cén **toradh** a bhíonn ann? Bíodh do fhreagra i dtéarmaí k .

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An Teastas Sóisearach, 2015 – Gnáthleibhéal

Matamaitic – Páipéar 1

Dé hAoine, 5 Meitheamh
Tráthnóna, 2:00 go dtí 4:00