**Matematika kritériumdolgozat I. rész 2014. október 18. Név:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Gyvez:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

A megoldásra 60 perc áll rendelkezésre. Egy feladat helyes megoldása 2 pontot, hibás megoldás –1 pontot ér, üresen hagyott feladatra nem adunk (se pozitív, se negatív) pontot.

**A feladatok A), B), C), D) állításai közül karikázza be az igaz állítás betűjelét!**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **1.** | Az egyenlet gyökeinek száma | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A) | 0 | | | | | | | | | | | B) | | | | | | 1 | | | | | | | | | C) | | | | | | 2 | | | | | | | | D) | | | | | végtelen sok | | |
|  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **2.** | 20142014 utolsó számjegye | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A) | | | | | 2 | | | | | | | | | B) | | | | | | 4 | | | | | | | C) | | | | | | 6 | | | | | | | | D) | | | | | 8 | | |
|  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **3.** | Ha , akkor a értéke | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A) | | | |  | | | | | | | B) | | | | | | | |  | | | | | | | | | | | C) | | | | | | 0 | | | | D) | | | | | 3 | | | |
|  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **4.** | A 1 egyenlet gyökeinek száma a intervallumban | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A) | | 0 | | | | | | | | | | | | | | | B) | | | | | 1 | | | | | | | | | | C) | | | | | | 2 | | D) | | | | | | | | 4 |
|  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **5.** | Tudjuk, hogy Kati az óvodában rajzolásban is, éneklésben is nagyon jó.  Ekkor a következő állítások között a *hamisak* száma:  I) Kati szépen énekel, de ügyetlenül rajzol.  II) Kati nagyon szépen rajzol.  III) Kati jól rajzol vagy szépen énekel.  IV) Kati ügyetlenül rajzol és hamisan énekel. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | A) | | | | 1 | | | | | | B) | | | | | | | | | | | | 2 | | | | C) | | | | | | | | | | | | | 3 | | | | | D) | | | | 4 |
|  |  | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | |
| **6.** | Októberben az iskolában hat osztály nevezett be a focibajnokságra egy-egy csapattal. Ha kétszer játszik mindenki mindenkivel, mert visszavágókat is szerveznek, akkor a lejátszandó mérkőzések száma | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A) | | | | | | 15 | | | | | | | | | | B) | | | | | | 30 | | | | | | | | C) | | | | | | | 45 | | | D) | | | | | 60 | | | |
|  |  | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | |
| **7.** | Testnevelés órán 33 diák állt nagyság szerint sorba. A magasságaikat centiméterben megadó adatsokaság mediánja 168. A tornasorban | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A) | | | | | | | | | legfeljebb 16 tanuló magasabb 168 cm-nél. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B) | | | | | | | | | legalább 17 tanuló alacsonyabb 168 cm-nél. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C) | | | | | | | | | 18 tanuló legalább 170 cm magas. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D) | | | | | | | | | legalább 20 tanuló magasabb 170 cm-nél. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **8.** | Ha egy négyszög átlói felezik egymást, akkor biztos, hogy ez a négyszög | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | A) | | | | | | | négyzet. | | | | | | | | | | | | | | | | B) | | | | | | | | téglalap. | | | | | | | | | | | | | | | | | |
|  | C) | | | | | | | paralelogramma. | | | | | | | | | | | | | | | | D) | | | | | | | | deltoid. | | | | | | | | | | | | | | | | | |
|  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **9.** | A 435 –höz hozzáadtuk a háromjegyű számot. Eredményül 9-cel osztható számot kaptuk. Ekkor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | A) | | |  | | | | | | | | | | | | B) | | | | | |  | | | | | | | | C) | | | | | |  | | | | | | | D) | | |  | | | |
|  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **10.** | Ha 6 osztója *a*-nak és 9 osztója *b*-nek, akkor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | A) | | | | | | | | *b* > *a*. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | B) | | | | | | | | 54 osztója *ab*-nek. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | C) | | | | | | | | *ab* nem lehet nulla. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | D) | | | | | | | | *a* és *b* nem relatív prím. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **11.** | Egy rombusz átlóinak hossza 12 cm és 20 cm. A rombusz területe: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | A) | | | 240 cm2 | | | | | | | | | | B) | | | | | | | 120 cm2 | | | | | | | | C) | | | | | | 60 cm2 | | | | | | | | | D) | | | | 32 cm2 | |
|  |  | | |  | | | | | | | | | |  | | | | | | |  | | | | | | | |  | | | | | |  | | | | | | | | |  | | | |  | |
| **12.** | Egy négyzetes oszlop egy csúcsból kiinduló élei *a*, *a* és *b* (*b > a*). Az ebből a csúcsból kiinduló testátló hossza: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | A) | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | B) | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | C) | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | D) | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **13.** | Az egységsugarú kör 270°-os középponti szögéhez tartozó ívének hossza | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | A) | | | 4,71 | | | | | | | | | | | | B) | | | | | |  | | | | | | | | C) | | | | | |  | | | | | | | D) | | |  | | | |
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| **14.** | Az alábbi, négyszögekre vonatkozó állítások *megfordításai* közül az igazak száma  I. A téglalap középpontosan szimmetrikus és van szimmetriatengelye.  II. A téglalap két szemközti szöge egyenlő.  III. A téglalap két szemközti szöge derékszög.  IV. A téglalap középpontosan szimmetrikus és a középvonalaszimmetriatengely. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | A) | | | 1 | | | | | | | | | | | | B) | | | | | | 2 | | | | | | | | C) | | | | | | 3 | | | | | | | D) | | | 4 | | | |
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| **15.** | Az  egyenlet | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | A) | | | esetén kör egyenlete. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | B) | | | esetén kör egyenlete. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | C) | | | semmilyen esetén sem kör egyenlete. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | D) | | | minden valós esetén kör egyenlete. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  |  | | |  | | | | | | | | | | | |  | | | | | |  | | | | | | | |  | | | | | |  | | | | | | |  | | |  | | | |
| **16.** | Az grafikonja az függvény grafikonjának | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | A) | | | az tengelyre vonatkozó tükörképe. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | B) | | | az tengelyre vonatkozó tükörképe. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | C) | | | az egyenesre vonatkozó tükörképe. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | D) | | | az origóra vonatkozó tükörképe. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  |  | | |  | | | | | | | | | | | |  | | | | | |  | | | | | | | |  | | | | | |  | | | | | | |  | | |  | | | |
| **17.** | A 2014 számjegyeiből képezhető olyan négyjegyű számok száma, amelynek számjegyei különbözőek | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | A) | | | 4 | | | | | | | | | | | | B) | | | | | | 12 | | | | | | | | C) | | | | | | 18 | | | | | | | D) | | | 24 | | | |
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| **18.** | A egyenlőtlenség megoldása | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | A) | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | B) | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | C) | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | D) | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **19.** | 2 dobókockával dobva az alábbi 4 esemény közül a legvalószínűbb, hogy | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | A) | | | a dobott számok összege 7. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | B) | | | a dobott számok összege páros. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | C) | | | a dobott számok szorzata páros. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | D) | | | a dobott számok szorzata nagyobb, mint 20. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **20.** | A zöldséges pultnál hétféle gyümölcs kapható. Kati háromfélét vesz, mindegyikből 1-1 kilót. A lehetséges összeállítások száma | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | A) | | |  | | | | | | | | | | | | B) | | | | | |  | | | | | | | | C) | | | | | |  | | | | | | | D) | | |  | | | |
|  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |