OXIRGI RAQAMI 6, 7 VA 8 BO‘LGAN SONLARNING KVADRATINI HISOBLASH FORMULALARI

Ilhom Jo‘rayev Ro‘ziboy o‘g‘li
TerDPI Matematika va informatika yo‘nalishi talabasi
ilkhom.jurayev.03@mail.ru

Annotatsiya: Ushbu maqolada umumiy o‘rta ta’lim maktabi o‘quvchilari hamda Oliy ta’lim muassasalari talabalari uchun oxirgi raqami 6, 7 va 8 raqamlaridan iborat bo‘lgan sonlarning kvadratini hisoblovchi umumiy formula keltirilgan.

Kalit so‘zlar: Oxirgi raqami 6, 7 va 8 bilan tugovchi sonlarning kvadratini hisoblash uchun formula.

FORMULAS FOR CALCULATING THE SQUARE OF NUMBERS WITH THE LAST NUMBER 6, 7 AND 8

Annotation: This article provides a formula for calculating the squares of numbers ending in 6, 7 and 8, which can be used by students of secondary schools, as well as students of higher educational institutions.

Keyword: Formula for calculating the square of numbers ending in 6, 7 and 8.

Umumiy o‘rta ta’lim maktab Matematika fani kursidan ma’lumki, oxirgi raqami 5 bilan tugaydigan har qanday sonning kvadratini hisoblash formulasi mavjud.

$$\overline{a5}\cdot\overline{a5} = \overline{(a+1)a5} \qquad (1)$$

Ammo, oxirgi raqami 6, 7 va 8 raqamlari bilan tugaydigan har qanday sonning kvadratini hisoblashning umumiy formulasi ustida uncha ko‘p ishlar amalga

oshirilmaganligi barchamizga ayondir. Ushbu masalaga javobni misollar orqali qidirish zarur deb hisoblayman.

Oxirgi raqami 6 bilan tugaydigan har qanday sonni o‘ziga o‘zini ko‘paytirish natijasida hosil bo‘ladigan sonlarni topishning umumiy formulasi:

$$\overline{a6}\cdot\overline{a6} = a\cdot(a+1)(2\cdot a+3)6 \qquad (2)$$

Misol uchun: oxirgi raqami 6 ning kvadratini ushbu formula orqali hisoblaymiz. Bunda, a=0 qo‘yib tekshirsak.

$a = 0$

$6\cdot 6 = 36$

$a = 0$

$0\cdot(0+1)(2\cdot 0+3)6 = (0)(3)6 = 36$

O‘nlar sinfini misol sifatida tekshirsak:

$a = 5$

$56\cdot 56 = 3136$

$a = 5$

$5\cdot(5+1)(2\cdot 5+3)6 = (30)(13)6 = (30+1)16 = 3136$

Yuzlar sinfini tekshirsak:

$a = 18$

$186\cdot 186 = 34596$

$a = 18$

$18\cdot(18+1)(18\cdot 2+3)6 = (342)(39)6 = (342+3)96 = 34596$

Minglar sinfini tekshirsak:

$a = 865$

$8656\cdot 8656 = 74926336$

$a = 865$

$865\cdot(865+1)(2\cdot 865+3)6 = (749090)(1733)6 =$

$= (749090+173)36 = 74926336$

O‘n minglar sinfini tekshirsak:

$a = 2579$

$25796^2 = 25796 = 665433616$

$a = 2579$

$2579^2 = (2579+1)(2579^2+3)6 = (6653820)(5161)6 =$

$= (6653820+516)16 = 665433616$

Yuz minglar sinfini tekshirsak:

$a = 25198$

$251986^2 = 251986 = 63496944196$

$a = 25198$

$25198^2 = (25198+1)(25198^2+3)6 = (634964402)(50399)6 =$

$= (634964402+5039)96 = 63496944196$

Oxirgi raqami 7 bilan tugaydigan har qanday sonni o‘ziga o‘zini ko‘paytirish natijasida hosil bo‘ladigan sonlarni topishning umumiy formulasi:

$$\overline{a7}^2 = \overline{a7} = a^2(a+1)4^2(a+1)9 \qquad (3)$$

Misol uchun: birlar xonasidagi 7 ning kvadratini ushbu formula orqali hisoblaymiz. Bunda, a=0 ekanligi ma’lum.

$a = 0$

$7^2 7 = 49$

$a = 0$

$0^2(0+1)4^2(0+1)9 = (0)(4)9 = 49$

O‘nlar sinfini misol sifatida tekshirsak:

$a = 8$

$87^2 87 = 7569$

$a = 8$

$8^2(8+1)4^2(8+1)9 = (72)(36)9 = (72+3)69 = 7569$

Yuzlar sinfini tekshirsak:

$$a = 26$$
$$267^2 = 71289$$
$$a = 26$$
$$26^2 = (26+1)4(26+1)9 = (702)(10)89 = (702+10)89 = 71289$$

Minglar sinfini tekshirsak:

$$a = 955$$
$$9557^2 = 91336249$$
$$a = 955$$
$$955^2 = (955+1)4^2(955+1)9 = (912980)(3824)9 =$$
$$= (912980+382)49 = 91336249$$

O‘n minglar sinfini tekshirsak:

$$a = 9458$$
$$94587^2 = 8946700569$$
$$a = 9458$$
$$9458^2 = (9458+1)4^2(9458+1)9 = (89463222)(37836)9 =$$
$$= (89463222+3783)69 = 8946700569$$

Yuz minglar sinfini tekshirsak:

$$a = 77777$$
$$777777^2 = 604937061729$$
$$a = 77777$$
$$77777^2 = (77777+1)4^2(77777+1)9 = (6049339506)(311112)9 =$$
$$= (6049339506+31111)29 = 604965061729$$

Oxirgi raqami 8 bilan tugaydigan har qanday sonni o‘ziga o‘zini ko‘paytirish natijasida hosil bo‘ladigan sonlarni topishning umumiy formulasi:

$$\overline{a8}^2 = a^2(a+1)6^2(a+1)4 \qquad (4)$$

Misol uchun: birlar xonasidagi 8 ning kvadratini ushbu formula orqali hisoblaymiz. Bunda, a=0 ekanligi ma'lum.

$$a = 0$$
$$8\square 8 = 64$$
$$a = 0$$
$$0\square(0+1)6\square(0+1)4 = (0)(6)4 = 64$$

O'nlar sinfini misol sifatida tekshirsak:

$$a = 8$$
$$88\square 88 = 7744$$
$$a = 8$$
$$8\square(8+1)6\square(8+1)4 = (72)(54)4 = (72+5)44 = 7744$$

Yuzlar sinfini tekshirsak:

$$a = 16$$
$$168\square 168 = 28224$$
$$a = 16$$
$$16\square(16+1)6\square(16+1)4 = (272)(102)4 = (272+10)24 = 28224$$

Minglar sinfini tekshirsak:

$$a = 595$$
$$5958\square 5958 = 35497764$$
$$a = 595$$
$$595\square(595+1)6\square(595+1)4 = (354620)(3576)4 =$$
$$= (354620+357)64 = 35497764$$

O'n minglar sinfini tekshirsak:

$$a = 9258$$
$$92588\square 92588 = 8572537744$$
$$a = 9258$$
$$9258\square(9258+1)6\square(9258+1)4 = (85719822)(55554)4 =$$
$$= (85719822+5555)44 = 8572537744$$

Yuz minglar sinfini tekshirsak:

$a = 88888$

$888888 \cdot 888888 = 790121876544$

$a = 88888$

$88888 \cdot (88888+1)6 \cdot (88888+1)4 = (7901165432)(533334)4 =$

$= (7901165432 + 53333)44 = 790121876544$

Yuqorida olingan natijalardan ushbu hulosaga kelshimiz mumkin:

1) Oxirgi raqami 6 bilan tugaydigan har qanday sonning kvadratini hisoblash uchun:

$$\overline{a6} \cdot \overline{a6} = a \cdot (a+1)(2 \cdot a+3)6$$

2) Oxirgi raqami 7 bilan tugaydigan har qanday sonning kvadratini hisoblash uchun:

$$\overline{a7} \cdot \overline{a7} = a \cdot (a+1)4 \cdot (a+1)9$$

3) Oxirgi raqami 8 bilan tugaydigan har qanday sonning kvadratini hisoblash uchun:

$$\overline{a8} \cdot \overline{a8} = a \cdot (a+1)6 \cdot (a+1)4$$

formulalaridan foydalanishimiz mumkin.

FOYDALANILGAN ADABIYOTLAR RO‘YXATI

1. Sh.A.Ayupov “Algebra va sonlar nazariyasi kursi”, Toshkent-2019.
2. I.Allakov “Sonlar nazariyasidan misol va masalalar (yechimlari bilan)”, “Surxon-Nashr” nashriyoti-2020.