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366,775026214,748096705,793445139,843777378,260410670,886523131,987905921,84687334,429340626,396791640,185045805,669421626,239981466,488987942,905077564,844974931,972261852,222964117,673055000,8916088,181745901,581657789,216869002,625991914,890456465,33254998,789156815,621726557,206464239,539147893,319283036,189707073,318581720,158511690,549722649,474279541,217542735,588512477,719188706,750615629,670650479,887800299,839461781,236680795,392272648,50179951,372961655,555888429,823480444,688356387,579205220,278436755,191335642,446035118,230828592,927436108,360188208,303930317,884101893,834202390,87171156,68015106,308625175,650195072,892713008,626374335,960560974,110708637,802084591,962161400,843973548,660211031,996831033,353790019,997808062,726402002,733485379,6740409,31483382,497900518,55746700,504605265,58619278,308103754,952151239,737175784,592302442,283896069,141521146,347007305,223960582,866901494,60035129,462116322,451126179,71641157,219959682,274752295,591314507,877752936,320799947,245355447,837241502,88895324,615725591,767122598,579903846,160131789,580449056,170138548,503279852,685596655,237298779,608011185,54087724,721562572,448609589,128466244,676300026,11474783,53108506,204596990,374314550,172200902,354278074,539822076,666275360,718754688,691070605,232082828,458065821,239548393,170972208,784088690,215877609,334540385,505038176,906130665,649640708,38509437,516298535,50746968,203362176,667468897,428185831,451379415,98826316,967726108,97219125,991856269,582231132,847383099,919562280,276303724,43574802,19141918,875079944,460137596,179581786,59071727,542114907,647802942,956351862,507878687,367328045,951361559,531119372,344626136,136206616,506995211,461532565,14730724,97539301,148303394,723759350,926007873,591344194,359369765,162479395,663742381,925068817,229963289,518983639,77297734,390124075,956562367,833603563,5452709,476810754,414984723,651962942,842509121,476886137,766949555,497820959,886095075,210490951,703729704,416509297,921383054,621882694,731142416,250246951,189917340,42426178,365647862,117722571,172751657,295166514,48181155,93718292,172841090,941185073,678691375,31208607,515904258,212970303,868048621,815110449,650707429,869717294,602284538,846346366,322635465,429896027,966095089,839988892,515950741,334468221,582602698,251025534,429654001,96857296,797686354,368679146,42732074,439288690,897166756,784924019,505330302,565876167,813164411,32151915,563432840,543043705,806325974,939242792,351095578,131928235,191798671,243871782,535593693,388818203,744122196,644410556,776407150,829000869,649660545,640835720,443491807,102685440,897496472,5038114,199133268,763210519,701715706,173357441,574304758,420780767,233947049,554840540,636547608,182648834,884916996,751181228,848085946,601059840,736046669,501239457,968381108,84276547,998969117,515690022,898498056,525488069,333274048,940368618,235770702,1168207,528666761,792489276,902955968,271895418,105568904,138175706,672554332,148018962,985765722,187634515,767674261,81342949,512986391,502949127,309410776,831073698,334211707,9152951,674977082,984243258,780201226,658653881,609414033,407810407,217689744,39890904,106155800,589660755,881335562,146044629,404664275,254904210,236842446,637521338,82831954,70648967,822951109,91607695,368330375,112498174,511664598,799078687,571436502,791191212,782635668,411240885,766001606,286189198,173703021,84629046,827154564,492764862,423986821,290068513,797368856,546210330,16969089,3700998,234052179,203893705,592157643,358710468,34429618,885584613,343523845,503661253,224493407,124086681,178091409,874211459,809839010,211321681,506884515,208909916,934713141,276657656,119402910,793053728,958627306,90333746,80472949,51184936,189774856,543702731,217033936,411266443,216920955,613555110,959531015,764895498,118059014,133033697,94266435,574530963,323320106,422351904,745621120,152806655,994528287,107214352,726700802,250466154,835526218,714421134,379501919,583880134,693141140,816012558,374817374,407556344,763051994,575350159,418354931,18368111,69904935,886544712,884150445,198292481,412662796,54037281,187583354,472980877,526038025,105606721,820994949,345894006,160935972,130683341,391230394,707207471,828115171,212001318,730218528,714548279,680494089,306566563,768997045,318854864,121359286,238616830,937297211,100306058,321459090,654831157,551062288,753053475,878277081,18249363,980735544,680740862,521714038,377480373,255863377,967090871,663661787,6586964,174246317,452933099,219836764,637641955,930924181,673898514,374260086,198931228,369416773,679520356,503200362,624929338,470797948,63217797,846085118,262787877,374283688,74029024,196721037,91444944,452650755,772794151,973141180,967885154,940011844,19269037,897187653,977880731,349172804,252423499,696847090,825443717,345023195,751356683,260381014,18415842,498850910,543189309,290240660,516913841,598475674,316628091,336695155,34832385,701906585,648660732,48683611,592665604,206357615,293028052,742237342,858716980,289988384,336453509,362058171,664785374,939139121,938059440,73004286,910395184,216869517,71965634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5652,519079921,851836225,121289951,758438267,942866221,539378306,103503206,977207886,56219957,778644895,654002290,546641624,360400961,349438612,657175006,320644790,958513279,104168810,138172661,755659918,6536474,562991393,382185234,422697620,953409991,514464101,687979716,169618396,476880337,854212950,673102676,907591409,688614802,259463103,845058331,403912516,187421981,243575423,659114891,202525000,946487297,990028757,304165186,608811591,379161827,255585231,673762390,547870050,898575694,6007586,768111712,77624434,406732563,380658337,973824903,914655123,865928276,398246353,427384693,734471132,231860407,862816601,136297009,633594353,205222145,704958444,883701907,533712543,848643598,220044555,645094460,86547770,276490771,58247749,903199767,441927596,153686107,473868055,104172108,993434298,466614160,463499776,174209922,369787816,386490287,743269659,314774182,682102936,340026797,754396975,946750196,677358807,432217650,547392683,491782245,293471207,862425309,625192022,215458951,94020001,775259754,752156058,581578855,190403368,537912521,802750426,632927711,768182582,270322973,717622649,170688082,23484838,406764961,96383771,664995030,718512281,323979869,604776050,537311750,525168672,875477191,329633365,415797432,427965974,90402042,679591470,392534833,358370782,950952950,433800613,319880535,932295459,358439976,579284926,79811102,46044423,300409623,157279637,484593248,542583437,459586458,729515422,49311977,733673650,227215745,480307693,701015694,184942122,999955098,423066475,365443410,871690228,479048320,327351849,62396585,853192204,359219567,188361371,989239817,613856075,277619566,633394908,131793267,81897531,249440986,800304686,7269417,476200114,971350621,273228139,210096932,233472245,681529945,232699193,866919001,234000668,208327731,673581955,441849319,39123205,276937307,591880622,476962466,326884625,329763827,264853153,175959515,690484630,56338998,177301947,929273366,297359691,404950034,784241709,790204808,602423386,505316050,310494492,365352707,362959763,300294959,223609041,872901144,39465245,164539376,351589794,625757085,101711696,461097562,179608925,800763178,400110820,952606554,850066537,20049262,756068584,474838886,182205718,744792644,17781445,717108253,412522555,961084943,808975474,623927260,122870305,934574328,371185392,694681496,179782094,371148503,669733930,929346452,656504908,547793837,832213813,76997106,611816241,315277959,679670886,349679342,130459850,788811763,576502307,663064069,85885173,688159344,436627027,585679155,537065959,111486000,527666282,185705531,150958335,920378236,580740393,391572504,95845105,170127283,393498012,553877845,240283882,768686931,68940157,598373208,810207649,187711952,440432119,464206872,327205201,723059026,474289993,897433459,381240879,103686557,302179199,792578090,361247771,243646599,196217295,333987951,864463557,129317028,707574942,903094464,293931785,59398451,316472243,404187404,626517154,895994052,803248667,878420371,202463623,576005310,969673364,871711386,204572494,908992908,584499286,353518917,392959341,127417349,901120325,618357775,554979611,777107457,375913818,229119375,610204570,722022590,562719298,720070040,656042364,229810596,306392433,156229740,423794025,392921565,201355778,198438982,273229811,27759212,266716518,986215927,900023773,360580655,694964035,645248123,157554664,113357566,160670313,308570913,27541297,286262886,803074557,573450284,734539782,237457337,367691160,381895915,174142848,574096547,370339482,917699834,793607378,119142106,628985464,378111689,59672856,378026835,259805457,680070038,582720548,821063436,689730397,727408490,446153587,642487514,719935047,40789085,105476830,228363511,953367123,670117384,606489793,479719438,500089237,986014201,695209646,315328809,535032426,99715213,725728015,3044341,765591500,680736623,201484910,94220880,926088312,57010780,477136941,415274506,427527706,345998501,570665121,137152210,338567103,142640530,785682454,41710585,43922238,475389377,144358545,638006189,249935033,59965849,969026813,971847869,641381100,314954980,488533918,983186661,482929654,776358692,166453385,236819393,322663721,670205506,122177446,560536512,503014390,338210788,799847878,233098945,66925634,268065976,389737171,544905574,489036376,64912255,111210921,115692273,192000268,904978150,311851224,302415258,956107897,707226254,252686417,428053820,866913650,296650535,582402184,431381877,226505380,623786231,335408736,517437779,885888996,241599466,499081460,74865204,339764187,597622698,84174558,857085879,640236800,209787952,998616110,184732951,736921318,168460618,210562651,12499223,396350841,421651342,325834399,189657037,944337874,829021452,724161765,687266262,953339324,831105307,495839618,133523959,835408808,870725556,855133318,90689472,204505335,722051394,434353264,955328430,350937057,747345423,112156112,919715030,750100747,180454819,294284787,671316413,251337248,743378767,219350389,449205778,809905251,883020794,751202161,646559394,434375559,761938527,327062429,415000772,206168133,500332734,122495814,899606753,658895341,707478845,373442452,534580565,978331822,95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,202386114,798369197,252831416,776291277,95538510,41974027,575876805,612604408,988441637,999997022,459040834,816882347,371683057,722832175,905020831,351064559,1758366,382997744,362840,9454367,249394318,643869405,270051277,845773165,889006739,829854729,967190587,30750263,612641451,334450680,660369671,705345202,88346803,568886061,101780691,943659282,292228375,280491444,456723168,770988248,405203271,744191383,368526832,499653990,747927977,542415251,83560574,663576702,268987961,542997315,67325894,497039111,503064606,585560070,78618808,193871953,734113078,907063709,709194737,318906468,749684474,225379669,844109147,428203712,632106753,521088958,754209624,241016023,563434093,526541291,831311071,132961106,731553964,537868457,658834807,796196466,695534296,41303792,580327198,482683350,325588839,608897222,149031152,500944562,339339967,697034416,798165914,51990386,658815794,627795889,749271669,178929847,695209192,336212067,219769963,398872412,446637105,70343617,187644444,560206524,240260249,352939553,344601966,950568549,440859995,553523608,585936101,108006954,571050699,182453721,911111249,583475600,168738032,841746982,980183979,529336651,893312584,989309759,696399809,642773623,225727741,353144865,539219626,154918264,57060414,244640346,942568270,853035816,459604300,956072523,581787210,190315706,46518600,386452543,173238948,885318626,26017242,777140515,691418118,457776492,803799245,336063964,858508523,342261666,535296328,661460139,874289151,899563564,719563983,106992188,790643600,726344951,856242746,181129128,273424480,32142973,22393300,302052060,273302922,674698914,499132052,821727614,505771379,57102402,377066150,754173471,10920154,143762909,926330921,121604103,783266080,969209891,840415560,2956891,519339438,64217176,536192360,427175288,617638438,585904367,491093916,721519567,894894964,955765905,549365893,437534275,383756191,68866964,720228061,624205206,902760594,995506760,747255911,395614414,277958248,371324022,522587839,865903984,340160377,807913201,405303619,181247200,483639469,839546234,524622535,149735291,422122690,812245117,813706738,532222255,993129790,707606789,701154624,146719581,250810634,910210285,554170934,754195713,762763219,683358641,171240343,677638815,299618821,3331979,859463623,609652737,478446886,48797394,68164886,233163939,322005531,964316913,561809578,476717583,843702533,302348454,545751006,705725110,833907406,99370081,575703819,428077111,624686749,792629530,367052512,456497466,205288656,794908196,872158013,942815235,712298735,106814452,305942036,797174245,944153640,205778243,185092707,718229528,542152302,512321231,907277292,548734517,715783060,705979039,319090460,789725089,515014124,556860953,626899901,582257397,512940904,494778596,545190391,41201888,998128325,494656801,988887673,594677518,462469555,289763659,911345934,831567515,744848180,361705711,374172247,333196557,434537543,485646402,846686570,901698347,350612130,836769743,445306366,756616250,819529953,972377685,318324929,72672857,38657614,800009404,743038378,541163126,921952581,17870537,34316247,752049260,230677892,725823184,134397973,951478829,492735987,633937523,811491864,80501555,870617185,961069276,490792980,946776281,908742131,975284544,592369338,139190259,86177975,231446127,979435566,596158028,245816036,969597922,709016385,777736605,724580696,936409523,207355894,149234731,821782308,718084225,583237956,17017305,590646671,863326723,49162051,353638484,923445993,221199632,912921410,31688425,518481653,890656034,641145337,112998522,851020396,188044285,613686570,816153076,74576683,281625729,276759261,530671643,759804350,379686455,205227640,677342728,854771875,319338808,327867034,837681315,752771603,161852619,117118454,458096133,334077578,798896155,529812166,741177939,802085037,958914579,528059709,759923490,46570400,385580812,228036345,172420985,956982794,500294501,352370823,694627809,328839422,719899214,721709230,736858795,711568625,130333101,308935876,141394035,722390058,748319126,969177341,832207523,414514115,980491374,712746222,90380307,848900594,734621791,863306194,446546685,436739405,334324829,220590190,92295794,912349771,423066404,696107111,65827312,841333589,927350962,98033445,850211222,468101740,603652632,191284631,482740748,416046952,884469824,894271390,201100998,608604866,238672754,896447598,439881373,452594641,373956105,765221173,301629910,666983266,763650649,122309038,657005006,864797421,656104163,390874969,202343132,247390516,802375929,129196282,110323356,137428472,673415078,606554445,141131574,327040571,833727001,662456220,739362061,621994990,41603985,643253925,403641304,830894551,124410020,688219840,102702268,414559754,489407492,669821255,277521237,715678864,272604262,653021347,917271288,467447506,825263817,837284341,674725940,280437244,165510089,212157853,258365672,879116459,70448333,116945376,822700638,912269863,386629622,962701070,501981571,890370863,862332869,75647778,986613835,817796079,834707594,53764677,874985566,356915492,609524755,728752470,80076828,25882452,697525866,82946374,352037167,455841811,790042286,87003808,150027312,56194573,45379893,138760449,63280558,100851814,255351433,254021070,783893100,315134665,863250725,20442034,205939690,81075835,966002696,571407266,744571620,364296910,319261358,958247923,291679694,887398814,966948320,899629505,590945780,426132391,635118125,128441027,494376494,917044940,214721656,276390501,652661636,250052264,455769388,254714330,162665118,11033455,271358529,990100953,785301372,240115228,488972688,651211489,856524564,470833618,692121592,773107648,750199334,898116665,233998630,40185065,2049396,831216413,265914715,343142196,843959256,307522199,273379006,58846857,302589721,276693095,159186377,785157687,672732757,45930692,317215496,33340058,685225159,308046199,705642283,543074660,829266911,582908037,846872227,475960409,443598967,128079551,837870231,451046071,227168115,388540554,202582484,324687037,624826489,75052603,561015106,172729865,399721165,187613633,422660149,114736886,759484159,808280304,586678455,332336749,518034979,249860438,563799560,773059763,19496722,255197285,2530702,744777980,428111334,668575225,718720596,712066838,940910933,495306223,951930342,49618648,564603963,440351901,899779350,245158523,921929579,396010774,669907189,184578709,212248190,146206685,126325355,642970327,644933898,281185819,506559499,917772047,395532551,397899008,770344078,313990443,176373377,628698696,866400909,147156768,145809747,752955346,259326319,160671046,823951924,341323584,491792048,88941962,944991938,657412039,230987145,354064716,792694081,439917631,215302015,7202322,621038153,374734882,223461534,894457229,471607534,788125840,444400662,738286263,750816401,15491399,617879872,297614933,944440930,471436973,20765365,272256566,733873535,139248559,476160747,318464323,750502750,412157407,587545978,485430955,884629823,749275642,709984722,553635606,904871532,116514452,709045207,414401523,852728024,273220151,435754014,371397184,495041294,391316391,398116346,511778456,864469480,382459004,846806378,988171074,557738127,136490681,620573827,373843859,387361648,783825604,349808448,937417390,122747969,628461723,280393592,157752883,165986908,147189150,151163940,489486447,326362149,240001852,953335067,665837967,644702121,514314133,371043662,210021600,214205749,247410059,138508610,379136528,979713384,876159,400059708,791791458,907342469,37111767,614647713,229833927,978552237,282764833,310093994,907939253,15936757,709644077,168018859,350376225,502244047,885094673,550620195,729139470,681378363,965083775,179278955,139003139,804393330,436083793,720688923,487887416,594910862,729626975,928858183,673858472,727412192,203585039,616361174,574083016,436454247,582491261,573294227,326867857,37251173,278805488,294309212,653527170,680914882,243489584,478887400,689285281,387311021,132876904,151589318,376754049,203983629,609977333,476436546,491203001,215320178,281262654,740562726,312292665,849030786,935753176,313641635,542583442,562674714,566842078,39120382,249910227,598697686,81124595,924465726,676573045,246675262,799006091,102071733,379941485,807723730,444479233,256253012,627117391,364194774,94812028,186456509,968408955,547296178,146815980,681356303,57088149,158561818,455776254,95714222,964067215,701026582,562940329,765572893,747271451,663817946,63140708,617915268,24434877,536424139,452911281,832270353,8074496,180422744,894784946,588039186,707476623,924857793,124936483,398439153,213872912,370121590,524160067,534254030,876193347,645888994,794981392,607778830,142193863,569551636,60059730,328630556,50584018,273064080,253500936,760163080,197228342,13154963,4466564,637954889,874701860,70513588,235261844,560340151,374087797,654063378,267691736,570019818,547254315,805602390,380040445,997703245,584921587,680310167,745735983,580208628,209604456,545930518,697061899,781950494,237690816,279830300,313745403,930727650,581381910,792340042,982854726,255713842,366518955,558167386,64192303,416019188,206760334,801963087,613494646,726703950,257377975,261418474,209167675,148792162,236125025,59603312,649188278,186583539,240149937,797947218,940281837,62060033,467408368,424108187,377503283,529462315,421218582,802542031,181222545,117720188,672356372,105041147,554659710,512208207,24844808,990619233,181787535,999690791,692069113,283647410,707891643,758702801,766751296,225783737,191190632,543791508,870578593,672788489,760481162,986739601,905224344,175945965,442248970,719531125,993532525,93849654,112946899,549165850,502795291,192176444,107708033,651452671,188051599,40895873,936648808,248300353,273976101,955653350,580472593,705225867,101385743,269821253,75343907,906818983,938966475,698262374,34519231,540981835,797338261,709244075,16311306,671458406,813709709,159449166,793899037,797633638,540776844,132169957,361130279,910897051,327485230,186531065,675020454,812900808,95666689,863713779,9653594,867855919,483773798,904949640,660722342,946102465,223824197,444405768,621969371,194934906,522872064,585377629,969453998,724331724,382806722,650119367,187479403,890063056,164185508,658431522,960627848,890935821,280201505,740500523,775388501,721168567,534476614,621501463,955671173,9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55,628723414,640144229,432136100,133383944,679208115,296970315,45510358,442875194,921711950,283370356,56927067,143382533,255821717,817667473,692316306,173225084,607060103,109962662,158202897,914621399,984373302,207699267,161672371,401271695,618262216,582792114,828903983,861355781,313137187,495104131,819022156,612721183,366491532,523534530,615092873,415849883,258022800,259421521,554691504,806237467,279162255,715074472,294542229,165747419,921859635,68320887,185083562,915912936,545728528,726342996,330179055,153025189,6824384,997810892,633564297,844676943,99367228,855651075,250140237,96719389,833018057,846683789,638469920,584583629,292264727,716863645,234816291,634176460,215864635,637426473,247598139,388156739,683520907,386991993,385091210,109237353,189341709,208142568,13173401,693247645,279973776,878028393,935106766,745497373,274287239,199236983,74536240,301193310,296179152,25418398,574141487,306245845,124348945,440876606,291227976,57810627,120803345,500007002,850039699,725464769,884807545,725116780,789565153,224113133,394914615,748025660,815120016,516756800,568743223,312383105,88248507,675748458,660117710,416380756,651493344,848224623,241694743,691757719,796962037,349682843,321108250,319434999,462859995,315495551,450967694,406135533,920013739,534402612,993953413,327054608,420562534,527032134,282852469,565699161,190556889,363652748,772932840,432722853,521528861,769981282,789849103,954692873,448389675,971327033,106557583,799276595,838676350,903290843,206120651,762038657,315726267,699827118,208317621,367899715,572560145,729593903,161320333,155793420,639851601,364972879,495606228,80441699,128603631,968384804,627743392,278084192,220416088,168514304,200203507,116334701,327002681,659910680,790017059,619484610,86098855,361217633,45677656,248228198,128311644,108705926,755322003,316495667,12832779,466456223,406389674,826033421,230541606,341055483,892428289,419302420,809189524,409395534,661386247,836513182,290288455,705095233,676490922,67419660,97267690,519524057,690372178,18611341,179228132,274941826,913614616,74881848,329227002,73827843,760566110,95444249,123677778,939516866,339366800,105828337,766552954,394896242,149109245,672670638,569849721,151925611,447393610,222672064,237788280,388932389,428651924,794423124,780510097,659561638,706288481,95390531,904566986,321304731,750069473,911170975,904457802,917775884,693050470,335615961,816081661,115710174,957529734,969046125,15379033,991878621,147510509,146521695,622933454,658229508,399858196,838405681,684803793,504897009,588285091,82271082,189898028,610838464,954507813,79304716,240735962,185883500,752349483,150717120,983804323,694494023,976673069,230379409,943340643,834672519,400904731,561550722,75213995,462995646,884766107,553092199,151807529,142672600,737300899,146411779,312798980,373253914,839335533,999816029,953741491,581604931,207555290,967587900,506612811,265739392,160422426,885703309,312546251,663599843,59790015,377989457,49791700,932265479,594083237,291738321,187838030,882210581,671465877,97236214,509720849,167140370,972888396,573521368,145924133,125342069,196762403,878927465,831452274,725366415,217650431,307463082,173205438,454088133,591448539,406431487,305519834,692141683,525965888,725348683,174827887,357557408,606178625,283280125,403181546,351351203,370562347,333745038,33905338,487361783,793382752,362075765,564227147,651081129,632419647,145328481,543604502,932440755,173072405,393079496,49657001,501180258,823361576,991098947,516163361,600673670,51694433,903027112,399705280,5526980,235409886,815140991,432400216,921002386,255552335,215282894,767334883,240104127,829112698,641238377,919447412,578745266,523177438,516783894,424683390,214855268,536236333,927092883,344555759,940470378,323929177,455180591,384149600,15468216,581535629,605448928,961149583,795772227,556262084,355861329,740074439,685013438,968886146,911193371,406475651,74837851,843952177,830898489,718473644,970929381,264642717,259109530,896827178,328467937,834805137,835908683,708620293,476751498,4632619,256690362,668981593,428767240,825822290,342852919,217086574,385240132,369571266,116242003,943036536,391522761,837697802,365201235,854408804,38167557,975575871,457468959,151002860,231239753,841328252,951798963,759531739,921498896,266820891,466587569,994672837,200037196,654601781,245393191,44256503,424318983,630976189,440946004,767972898,148014842,941450899,465127550,967684791,369339502,274694471,401167869,713340727,230568234,877628065,489871558,980447648,170413150,214396418,650173132,932336321,707533648,853702996,347521339,332858107,26231168,448271478,926763152,6748672,396732438,723730436,891525553,811863223,752556719,588378929,762712875,318152936,870801962,765570095,547678809,808572436,752447215,854311477,30303523,58447584,896415743,286683642,990189941,589247789,515965675,204110690,787065642,189056294,742275694,292000520,996030441,469994012,464592941,132110210,959305363,757321167,187376899,160103522,992755927,111518399,531301632,824848089,665680293,369288047,125337947,759310341,783999130,254914936,621393422,772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53,414487913,601089737,25499301,68417950,578607462,802997178,432394016,47183148,169508371,663291945,259276188,376976784,726927037,767354823,893111337,427230993,647940714,549305008,616004277,440723677,314136971,600874270,621415577,788925658,544212048,878519705,986226506,311044066,264623686,384180776,586357273,73219529,958309264,252525867,416253155,64065643,520138797,131432584,625368330,964731976,708207358,817109429,728985991,326784279,55123104,434276571,804385772,941758182,491220054,692717389,36427857,31748281,339137307,74272142,27430142,555630444,706417912,497632115,430003450,760537690,303631582,834643264,498431585,985970347,854744993,734602616,484683608,408803280,737630006,58013189,26194756,446412464,597962134,104881689,815881683,623362413,155530933,235130956,498786654,908254560,276572511,615197169,63345015,438061958,999652810,725218726,580263972,563748629,90614798,378381139,594668697,346812891,889602353,394721216,752375347,911359112,759403797,814288512,297051024,970887814,890848950,876365920,771035652,736835865,182606046,532202533,545030905,788420686,65504798,234674613,556229898,138087261,233715347,138560255,15382756,782919026,442469427,877957732,587778800,736294613,597227573,877649474,910044156,571072064,733835518,531445142,217783745,252383397,805451509,400810752,66897114,870899965,886496519,472862975,555020713,347533689,537779599,11338075,914786003,500961065,660214663,178150871,522237338,879573442,721835626,451113910,397249419,895554973,572132243,605062816,343109129,425290996,381755004,560690087,242611474,621457610,551651893,202499948,841069723,340842899,208823704,737011921,113927327,27814755,10375661,841132193,429537399,693856658,229022405,903744476,853077678,529130269,408745027,485603959,897149136,184827717,264430453,822322929,905521883,858670526,832615443,169182245,335720126,487296145,605388030,86946037,839572443,269843733,730879663,221876061,684053484,805184652,487476711,814313394,302975362,157240711,649754407,427510744,905458357,665314233,627174428,102562227,602888962,91127421,265494553,347206982,339034172,78808100,286902199,467987294,517620656,510155434,817623903,99983796,388960313,168900272,990704303,815625973,4077385,330790457,716610010,557025134,180177438,880956914,839966711,167141958,185248150,220817902,584359865,262347427,19368966,641950903,819979884,505586660,178593536,196075079,243973119,886882778,929763786,270210656,10985013,101721850,145987972,933058596,23572588,606511087,32162286,542871980,602233472,364929714,33915087,646884212,18171855,878834635,806001509,686001457,432090495,607480838,64226865,837291986,307294300,476789336,75703977,185257122,445581212,127485326,125357525,659518758,527137853,185221559,475511839,732414290,247433034,626717739,562035620,985499209,124677514,781040897,8403208,751132805,597664933,987713985,782434048,120164372,877042699,359722658,25913609,646062294,500972173,415615229,906580589,892459068,228649130,733260427,908379486,358355350,136240731,641045516,256582773,841296720,505912656,176404076,737494818,507652076,861397208,752192492,24437848,237543494,166922319,75665114,763921058,734728802,775020092,801468472,68486384,924073113,260373120,502235351,791107599,335356992,922098366,571438223,214360188,612686007,749081084,992089566,151003391,649737353,118531766,378182392,239981156,357532228,623238083,943233795,784661320,53153226,687948215,680298410,193699640,715518743,909711305,149240638,90221641,240897331,582755918,35133713,815546935,496196539,248288487,218953492,413069108,2010515,555601866,136798131,453279409,52134848,973409474,551291523,447998421,934990101,602623596,783285039,302416758,734138,733053852,237347066,151641712,785847916,807003248,51559683,943529023,668349445,121225804,708565822,882904334,748287227,723999174,239771299,627988732,896752071,470800373,931946249,613264659,160513868,997605776,508352558,614727283,430935876,83310434,145216106,557894879,806298430,649423443,960880299,990758804,83994412,418844487,384479288,909077084,771943722,711855969,707122497,666967676,215925645,876556989,362197880,218269213,780387381,287461105,535946370,177251890,756910,301839542,560123081,307322630,22414079,861836417,408203805,259117786,550246287,782976857,822960453,201230200,514840950,249499906,171879824,683374234,167306213,613738453,284605484,689985532,691832597,180175817,272684685,48264537,527090649,925215948,573724150,312024485,388056614,542527897,154063538,154324339,52479286,696495372,452422232,719209293,743141129,313349538,118240647,232438582,645207623,144141199,307982150,883744067,694862891,650346040,113272372,587276901,661222046,206143003,613980065,897159963,883917154,881164513,286429529,932011295,633652296,360591069,877854926,604632246,988988941,195454747,300195004,394122895,872986071,156875704,158956190,390609578,516028259,556161614,599234375,587964658,966011952,474664249,917094959,749099988,256472227,227335583,329645832,322902541,649931609,165968809,423528157,885148308,749480184,664246561,398666979,633200627,861457460,240868575,898248998,224127145,228293756,168008930,247773208,93651621,410715758,265349464,129558929,145387757,162426036,95111279,432853338,552127327,17460428,721513501,238073060,763445023,992943006,239966006,635866244,186539029,934324013,680012143,823441828,233324765,264395794,283007574,977627430,58709155,658328522,441642363,447872121,988310454,674289498,14306733,223775324,248894269,710296258,757256792,909000674,982377110,865693955,421606704,949901901,96914834,875353607,136867113,488649964,796405093,74772015,448058977,64818212,3334607,244600376,586943532,217647807,319311858,424784196,31031859,169701218,246962273,256531345,713788028,285232843,270099431,262638641,707353128,365590233,778092988,412447990,550336609,404960318,394883677,214134160,933121205,320149558,577035263,450314134,391454087,348464710,901796918,215778120,805227552,102743538,220480287,961172282,885258433,656379780,236658693,891188903,986791649,326930969,647757838,572145842,678923768,176188055,941763325,208999967,835104601,277022819,658046099,13092684,823734867,220115907,96231950,377639077,291717016,565428935,953387444,81880040,743508859,778619077,113282305,410703885,275687002,925854773,607015076,106291155,987932968,902895998,375198584,502556642,411121834,29457774,383141792,316048743,820129516,938603887,889581342,132395629,344980111,118874554,449487979,100139693,707598603,111797663,321520178,751498212,80299884,511674384,302947381,941996961,929659467,567923292,403025818,676543880,896558910,308975601,954447749,721095033,675456998,664498932,224635660,159480059,73161703,180491459,677658735,308352848,338422193,510086737,628474827,729277464,375284989,196409762,844780974,686863144,726560838,3545691,336827027,681876171,774509508,64343456,491702334,449177930,798451953,854500439,991915457,70097306,306198275,375765845,424449263,624473291,414465122,79511708,838832760,210948530,985950041,173070412,594219356,506178204,993593499,953744662,765411231,127158641,523541869,232676817,146391828,61764924,741367513,198484512,571540432,461072108,283177217,124106343,840993821,464716986,614813718,797414719,982594951,858404392,856858401,906101683,202289447,653806559,144632900,933362738,487496275,901070903,105486303,103490621,915737410,739127919,764371130,284841489,84139170,22881993,615302785,230527340,712746194,926880991,489770579,419882759,514842623,713720969,574020386,631313893,657832112,879022783,976260216,78543133,119542975,932140504,310504880,836337240,308210968,398171651,363469067,349305392,51415563,473811720,545072701,493740034,240150827,81195427,184888525,224972970,911716338,152282162,939058843,295703321,660352222,862988029,575830921,105509153,440388551,167346284,737512856,774762123,107214474,195062841,894177299,460753162,105003107,149383970,557236074,780338739,835434845,933411198,941540957,429490281,103733645,932948922,869619313,48868171,627828891,279600883,594735657,796034661,407898586,964047006,213274182,34757625,475487900,707900609,273707958,515882109,674481151,98820011,739868170,785429670,477634103,861655636,474736601,208248393,412408781,413962133,498697521,460250750,240656111,543354591,233369316,473377285,305372802,752882860,998133272,379480084,136411065,662888714,937646099,381419327,435764918,358593820,926398806,242623287,546585602,349374725,329617501,154556900,138962717,948887745,835739882,924712987,576150599,962073861,874060815,133338373,167127238,68552486,596160937,938544392,839479824,180448164,149371191,341231188,712917361,474819821,654343801,907402164,147269316,192735552,660345454,53152419,771693978,412600648,785732559,212551596,609267298,624648466,985121386,327887649,441319315,848285234,926706096,37276737,778892059,633109127,654254597,146540045,878343744,55104759,435686774,68526018,701366541,501853453,160356360,194050812,77888016,595932334,359134553,872748640,196873414,889227523,284698909,206017699,717495407,819034906,28826053,22139735,206610834,810967380,909358064,869743177,768798476,309478495,789494299,88167988,184110208,529784579,979230132,857122295,147277458,406937052,873745094,259274383,252118253,155499494,784394692,339519834,798508470,55646650,75656356,521067642,414389419,128756312,546116886,722486468,515786709,305935771,816229420,658983232,332371693,88019288,718670288,788389670,950500629,808087226,449781627,800497775,449138465,324288901,498799718,926523818,120225277,352210466,689434317,900090459,848016213,202153787,696961846,732190649,698448706,567667637,358841797,126456880,769730581,66043851,418924965,334892847,511087987,300134352,850154385,907661609,571814455,123896067,943491568,707482704,66214462,886488459,59844132,132443821,248813477,268083622,36012651,273889195,510097437,592682544,231922710,996989035,968175629,199377265,519146072,957307485,202058691,305650331,215674941,841885413,342348247,972071858,687879199,174149207,48250752,61068016,22885164,397731303,666539736,243666600,106992856,859002065,680405142,885222968,222340017,609865260,394689005,426549044,289683613,191074155,531333100,305643047,202214034,53493983,822580744,423579379,882078072,523879043,652680920,83079906,52935817,495693304,42164399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91,237515229,213859728,339190239,314947759,210431276,810084448,238357991,169896491,441961124,479499460,384696249,540822976,978306639,199631727,178589519,161597629,416350678,135288692,911214537,121540297,9585902,381747252,400507015,113504631,707258755,755021435,692905020,958472525,794345912,151494916,479941144,822198590,992993807,989600339,961145239,132661874,643115996,301320155,119339238,750609577,259128468,83810603,566376522,662886561,818741930,250677369,4942799,671841624,803854569,929482012,496448756,771616894,16703456,181212814,542421751,678935293,54173147,926982154,811178975,69047395,712648650,918460918,563903119,125148766,238081174,334116928,625356012,923040148,924103636,232063128,403604501,857975907,482067059,429383134,888058774,164336159,276269950,156498880,253265766,710592934,199669377,889217468,26306391,119985100,124789177,207054171,458161856,432349342,321653081,151139160,706529178,232016945,364619603,367605056,897740598,419897773,3763001,405419905,323809912,796829217,661152238,901493110,531392675,105618417,471729014,127934669,478817543,438939067,513813369,888422574,4691763,218123380,610140663,223076409,469015447,805529967,803908721,990978450,569868886,639841884,666077390,859993412,174069455,318236104,401981674,882378061,14502929,716411247,516579619,387395491,625845469,157656563,602460560,467618063,693919510,55370683,555341576,66067620,760558764,138874879,805662045,994448839,352297311,598984244,683851931,364735834,310265047,269775055,89979074,843668933,374634702,306861694,49355622,323538518,136017491,78990794,758330645,489329615,976782742,985693033,599478372,742949398,69227665,379591968,787675806,45079541,219817813,47904413,630126878,109816750,113102715,931709561,392200298,21438371,284511663,50144675,970426559,256917722,960831168,682168346,304090365,505357739,206745272,535404243,215134221,918219092,623544235,86189169,461241036,207373285,593987945,220192248,147274672,387098226,271497708,510226485,910947852,484657876,177665033,601575644,240837415,410367265,36091125,790593401,99919053,871510575,355136787,233453632,539552549,595759508,971225539,306017798,164186933,104196338,637305538,466361031,324835712,157034618,539576924,232289488,908693175,168455041,112107431,550078554,10157422,20803690,3366211,280511019,182888747,615379682,524934304,36062341,29190849,646068909,341695463,882439779,776263464,491983593,328512344,373377460,659593398,266189244,76727166,131702323,630879842,641740528,279848641,830718117,698564462,709739072,312484862,202908749,271578153,616184810,403545203,557681441,701288851,727224701,156789137,14525394,988181538,117291472,272032151,148803488,910523711,637851810,429707685,892992040,859373394,691818072,345901766,888552803,792688707,716708292,217712114,393618206,554156514,151072507,131460279,985933100,384577055,240964938,330511237,10536840,256977851,445977437,610999705,126468980,634686258,461586187,540610246,33131383,421263128,184264926,470025427,927636477,214286351,667551537,452179287,226861660,921912071,88801773,51294577,292548483,325862031,353525996,416735725,596144010,85661373,178047365,663072722,868099545,601503598,984333724,127698184,858296666,254621945,812376511,337523554,196381786,765544459,787126276,363575979,448803853,265514124,164985342,605366293,264468550,38938350,607847492,766851276,95542984,797564133,802903014,512865439,137537808,435415982,462282676,799358806,959166199,45840401,123750157,727732438,175345832,224552316,238773062,429787691,843690797,320500919,336700525,87217599,392635434,437884032,645578924,895725682,811569795,993872204,18454813,130474725,928991198,48815240,409824085,247398367,980885336,10467795,16877590,315127307,738973856,635634887,202014767,418162600,982889053,188679124,154571075,274343812,656657459,204818924,713235904,851345526,404757266,389050257,667841808,862288192,920281219,36537845,133644790,301723045,45738664,903454082,831883968,963920992,387238931,384174780,296844978,758479371,974770622,524639298,969293058,869877813,131543532,657896968,312175419,128818196,115716086,95651787,857097264,968686019,67835467,339320750,568716218,127524490,627253329,932039191,594548786,654415675,504334898,850306605,14541157,561246822,915165201,665639084,956406829,354695803,945443527,359708757,157050644,73855982,370156910,557783618,774306763,124583622,763750051,601770747,620853731,773377999,343796327,234072234,241477976,280154117,542928743,847447623,633749860,423529591,380651313,914712073,420229918,298276472,195045214,865130002,610555058,939009578,354684537,826644364,486638408,565589036,39349234,464562546,769837299,901889905,382658681,565930873,448609680,975200517,283684467,480236941,212756589,494243977,455709217,507927803,152501037,999212153,926435554,929082459,806665592,737345555,697981013,15828036,254751273,142420558,596753862,597412196,150202280,771073967,201380765,80253458,965018056,470451425,340167862,66216306,483760462,421016777,809865222,621787593,354705395,865815942,93672489,788018557,249526217,545726664,269536598,90071285,497046250,707103398,147819971,712298384,8268489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22601,676083521,143327454,865862024,403526367,567495700,241207279,555001520,891622102,51529718,375810669,828711681,82481843,186464445,435664532,720352829,763172722,23496123,844013610,749260056,128061988,562821873,174434138,177815623,528742499,208105330,581152803,728973131,224454613,680229466,772509788,482384472,787954391,662624770,138897658,817174187,650429795,157644969,41437753,614558952,124386097,634438728,615409534,466511985,478666093,708563620,15196667,590445331,184940886,536461522,790927972,212685004,757777280,274375641,294685958,112391822,392198727,427034658,10986176,69264334,573524725,372368351,270475108,571266611,224673568,790545503,629104847,572478815,860672621,781893800,150881971,701009049,16064038,651633822,554041064,782043038,462333978,604131174,949990456,249831795,4202007,532472919,7830481,567810662,217934217,297161578,404549364,825544314,826394986,380675907,288903779,981612553,203826583,320704619,485959559,958675831,77837628,897152439,150374521,509244256,650351475,794469722,251675134,946423654,203512648,852623545,610612699,257238456,341809506,589448039,112411312,935727455,241137126,885852744,726478610,190182445,403315331,433037569,863787153,748986128,533309255,424953437,780448707,241380086,419904062,239727288,747100742,299540451,60492353,118358159,804954005,650825924,44489741,612683773,177454639,679953241,529789181,197952508,970199326,329767072,473835679,754098388,759033438,647480166,392486342,179434056,487607806,974284736,615625306,926157603,271410851,710033893,949942938,968076896,640723847,360330879,495846940,489555349,557858933,725193255,151632244,602284987,735273269,723960750,56433658,356449602,324405816,805835149,10187633,313448525,513956892,504649036,386430889,396547442,335205018,399523106,463871398,279978552,299419240,676875432,999920954,759874966,830417075,124123056,667644723,912019506,358621054,611727559,899861473,299088366,396894991,296088048,227539441,575324567,742127242,386862123,201445693,16575368,502356749,108846256,960270263,418561816,242175449,669032830,498257055,106178401,646674352,227748708,566388174,55903067,751652303,558252538,297140279,318954690,411814223,47809194,703370369,290524019,242126681,893322879,553247149,932844108,482845990,814330563,156141056,531577643,883564811,383789305,239522890,218700947,802118337,237998174,667674819,380768150,381777955,423975328,316758191,561136049,276272611,408035287,164849880,148703732,256309096,313148649,922492285,576697218,427063604,487097616,344413210,870458249,142504247,995185140,909963772,138012403,942428707,326601362,67743742,400519843,75171632,72985462,47836986,916807065,506911591,877060860,253181637,750561271,514590736,817944176,27860637,547531532,25536272,989518394,261784595,594875092,983913659,715688080,68327330,704138879,129936743,23265095,10439055,27794844,720466075,355277899,473222427,249150402,926492126,321333671,49349133,326401948,474485876,442013044,642939640,817045916,275402805,832771956,791027757,601951816,671273049,817454099,373096668,972730181,347186913,880637519,586525267,178151161,610529655,428809480,283522501,655651905,226306065,731001867,120446029,556765565,397437853,280776299,627821362,121861609,495575178,194117720,594315082,316039630,134256786,822752090,34226324,422728415,327739507,236498443,295034576,908714724,562488103,705284893,604998074,818179655,909342657,236259431,262136309,847042621,125431270,190074822,902885579,946418602,973118710,32214586,777935721,977151418,665948930,417152589,483573189,511460500,496860535,967058065,136091671,25327492,311965128,114299332,154431137,282274427,202189250,13981046,874723059,922223599,688928283,671252953,987473400,53119022,473266237,673554459,651291339,956189217,941838181,641619751,86229232,787984368,100056440,670218898,506107292,990935919,898580646,115367524,789857326,672074135,389543740,778045007,159586574,640746132,835731686,414040801,737112247,332544104,795759771,711472138,551446864,83921299,532918902,987018702,255602109,15960488,550334697,310531237,96117401,518029225,505039234,789248997,160565770,813090489,193356080,153223696,249007584,447177238,324363141,348644711,808039038,779258357,52365798,374963829,876233220,174379949,881145219,882018417,910811126,506634517,896824298,102127347,670943417,702114625,269286287,325115632,63005864,906498039,710170800,794985846,841072836,15636700,693577114,224790511,949508835,516656674,311076879,342384592,234685181,98163522,625019172,18311660,68262312,905768311,752636296,533684812,583155313,891739691,249696660,216797500,934669188,225104063,965707885,589010070,91978795,817770407,782779361,968635972,216393046,18690403,54023268,115648653,949704473,184347862,305220375,348177288,96201618,141711121,949111212,14817248,103361003,489001750,521885854,434147322,914724348,770749310,225018768,751154584,760223186,438842722,784658865,835231305,767041206,313481894,708823259,462722915,934859845,832383642,609895044,365360666,800963268,672495640,35454195,963584588,183515333,273580239,209352870,819966270,529063139,982764936,138627034,372442191,748600728,93692335,814877617,465666133,349305391,611113924,976734171,969960125,834591566,441166416,166382552,656016060,884418312,914045523,148542220,461189974,377773139,218191121,976604193,849929536,963542464,966827944,899216462,690095713,697828169,670450898,304054887,77871216,138551669,689019704,190598832,73175660,309477262,537047911,814256487,733295973,234160711,855823728,141831010,187232903,178788683,300487300,674109044,467113608,496747372,580571076,220741303,442880518,581381255,937552192,805149426,94212752,286506468,297589915,775482181,742619839,501662668,33677827,932665107,843839529,286556260,873771061,679811896,104729122,901234367,472985211,939701932,743639694,25682087,600736171,723186266,175023055,669096644,785619134,315045669,577404567,880670579,129278808,174773733,232222959,483794393,334193415,783727098,293584184,20391351,510216137,522941807,728060210,11064155,62590915,465671198,833504229,321780033,320566180,378703805,137668334,135278492,402742781,921272927,187227883,608745964,633692894,453465862,358692780,994306850,285944752,469878829,232132934,135447292,104823324,321945261,591240258,680480709,832270624,207405314,705440630,754329810,521143645,38822113,828726892,207129651,620231185,32114336,247677058,36780344,622580978,5711746,26653302,966834452,283982872,754295164,362555651,194046817,729818956,269500381,448218839,881556993,186121963,249977508,113649726,983810058,69589472,584475271,343294911,704873955,625851968,843127823,613359736,318940195,759101115,480554780,231968180,356940285,817311239,807049796,546514090,940770928,789091005,336249305,275966139,717746427,279333476,640057660,193014468,441810133,346666640,166538987,423463605,116219290,782333238,914694101,275041348,889266079,407321966,866883132,430791446,137329631,438915282,473514349,989814130,467211912,198933907,311720554,136194638,980304311,330906661,83313482,135980256,189968855,980604182,327368718,513193052,344775908,651146022,864535822,366526519,532990978,32892040,114803405,173593998,702471324,77953450,37126033,537093343,295242251,778555147,508724449,740739799,349454374,667217844,102522724,890250424,812783332,889777966,237885299,687943360,164388275,250653397,894843186,976503709,372612219,696184787,990260231,525540687,263735647,578191380,249340759,382406110,626386643,371800720,211473432,259954356,399026214,560907558,621233522,938167873,70101171,482430658,777506606,851284309,95793162,470996578,552232444,253160870,422669261,859630670,195992674,459443378,427697502,741974448,993821698,362102907,205701443,598185895,986633288,812466027,18114364,369829972,388821759,703642853,744920398,969347799,418012432,929469700,351621428,613573077,617174341,570228546,559782224,454150164,568026084,498888776,813711696,196953628,479210254,705772911,229265527,20086405,259853145,974949238,309410346,831595526,144093488,363205695,640109459,278647587,337703545,316069917,88996462,529601614,359239149,554337171,381262260,222321256,241851246,897838550,849417754,750248529,483341032,985636274,726875023,770559532,306253085,303063990,621521016,149286458,443360518,472286460,945775620,996172244,445391469,264183164,63580053,54427571,848155941,539874137,885949691,198498086,52920118,475238548,804894026,267606390,506647189,126218298,217420054,499896597,129245071,470078764,85216504,461140278,839969592,29593953,214358352,126397428,897469375,225552115,622120574,360574576,615735728,943931288,754997286,622107823,957984270,318035798,309037380,7047504,118031920,919345011,203666073,565820357,871513032,725790337,886921713,442907844,97300438,135196802,516940124,780007653,466446823,174205572,692902702,528938691,218064489,465481426,538061499,124581814,495571707,901686441,136159224,7535436,17776132,826365713,410494556,427095988,783204915,227985607,204199021,687537219,312386920,814795110,74989354,969922690,658780556,475765029,442801187,346791456,578562136,544815683,315709523,416999269,607036458,584672903,580417664,672167287,448370632,677861827,513859663,382143395,570570214,628152624,312161002,627116319,584491323,570353914,735534850,234921561,645757085,385518146,14816936,954437224,787016403,53048547,602196937,818660441,102241488,9693729,63618483,597601650,989110904,253117309,511755513,117290059,756526565,310944273,447679765,884913289,122691341,555446038,58186102,521694444,355378198,385860254,956775227,659791674,994144166,404949989,254388136,629995491,648226200,116201769,11922953,571141578,912694801,546412195,80681020,551302189,433332549,388673679,594315645,135138073,726487800,513935104,944080404,686950095,986098751,591957858,135450697,769356365,383876623,328563069,124849318,630294108,399114011,808459585,196768032,860753353,939137069,428198907,351277988,743458153,272896074,333657768,276714693,444916215,422623488,329841662,724056296,110557611,111198496,560602113,936156422,443861522,588583038,603827412,55912358,911072960,345409202,172682447,295966103,575164738,406755907,593367238,829778492,190556620,68173975,247622984,770227412,414341297,537389335,172526882,400499309,241563966,707321777,110822642,676788414,238282752,468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381,244898464,614770911,53102535,976426264,586350658,394770172,868523257,584461718,718562785,11292141,713323173,872755161,708695006,884750474,718029613,996812168,77205964,393859993,445764104,855563009,655040908,811788908,471963104,257304435,323020850,35145512,762241801,447929587,367652052,941035717,452922954,349588308,23056914,472582607,299724056,354380377,62703721,853985353,100860057,503220513,39309819,611488669,239170123,172132457,267532705,642955624,44791356,484447125,161068559,138787326,377382440,767816541,531202773,761288237,156285375,380488528,580779952,590001529,434091577,123837663,680810569,904017954,341999074,496122249,550005380,271770721,27703464,939633794,756264365,804593442,605213458,500864075,300560653,761038407,626997097,994805464,815245779,246359814,89007229,522057539,43839037,61539375,535393060,117856588,902256017,255575195,957422568,492363095,299678336,917866729,866304734,658552191,227142293,827532909,134413834,625539011,828983149,129108390,428275568,508033385,513755660,32166584,230760838,39281544,608201526,321639716,511420194,664288424,490606524,64989025,4199663,477830644,334664537,163065970,490953181,82992055,579899059,798256883,37998437,714438740,170658246,320603758,329403200,748694741,687902888,236065638,374653280,222205665,589702732,815233742,622537538,27204211,311415756,39355005,768768958,441151223,901525605,667598085,235192821,429245687,989869634,775062694,801166587,589078501,791162811,603308922,435581303,957247600,970166924,532269638,176876635,455669048,532571425,576043063,670902347,848964298,897290594,551474098,706345593,517552460,779287711,926925958,544127862,625435466,93930902,852850333,862017778,708310171,977862093,345644361,315368801,400037323,848223474,561026079,166538862,613629421,751898756,588240579,562402860,100605305,365221690,128227756,209686283,315058905,868625287,906400500,328911095,700377732,887164624,418519229,159791991,896117228,596180749,384060349,821053141,967921895,213440365,495301425,297888984,1107187,729026736,456058259,728587202,525811659,564189910,671395593,96739602,579851282,251357031,39489418,288799077,403638933,963761708,848307889,679356379,95940506,617340049,930079563,886400985,433940039,218905436,341903089,232657813,686986777,278121118,805270604,361842748,63497972,932416363,82461450,166845668,561346951,971541334,435086571,774433951,281224615,422355063,37013834,145189739,465909915,842753706,631532267,418780116,998031976,393479734,423058044,596566863,121150462,431925056,811709220,977720193,825116519,185597975,871151808,419831900,617085175,619415108,480709587,974855672,108066851,756259577,890456193,896755732,586544620,923971990,239445523,876342493,924557635,599470793,360112727,575789489,465148056,648380140,978170127,259641107,433844974,416410874,475547893,318247345,924030704,357616514,217671111,857075046,154634358,655778328,894265636,268879602,415643377,752623284,767865328,624085157,454908588,805740075,669033997,809300059,36092382,102753503,707143172,493320000,157338120,678517440,186752501,688058024,950292969,676440589,908093073,931289567,194564069,22604714,368292229,17844319,113421953,299889766,80520355,397057942,11541586,646229680,711340421,338321217,466245900,103750586,454884904,374468208,6211955,190180612,945202087,471378651,706716013,354236203,391026110,766415857,947452624,235077101,858166882,205378103,934716009,539743939,19679894,803137981,193007592,749145214,787517458,680020929,690218925,347519719,466356646,540513904,449786833,810706695,178480022,281436366,704937379,214668864,935618977,846718660,210863555,268819264,130817146,741321747,789267820,560355073,246301311,587085398,796364358,725420899,369896908,319733533,833412869,621545585,162740113,412067863,657672728,575247318,691031461,556258322,316951534,698011994,903657368,15790629,622055280,515866036,125070378,918288791,342376741,165014637,282733741,953086535,922933976,911346001,716326596,665330211,128504985,677787980,64095123,533888545,515030695,636296119,984517772,603547078,287894169,761748514,898696152,434872700,440133781,292640549,241840486,818510534,514317842,709805126,254749065,174691759,385925880,214587308,924330153,36821868,245830931,355285470,355318053,767165617,915767095,380108289,336709400,44358347,123848320,662509121,836759772,539216687,698773523,896066341,505194016,514352181,271393675,85455149,825678537,847756934,392677124,226497601,318885747,443362167,711514001,536003799,637017758,979584983,165946923,343202213,569841735,773444676,384712721,863204185,296496059,90888522,436215370,156223151,178137791,344818736,982212471,676263328,586410000,868027972,14522350,627231704,809482419,369434982,863034090,531802579,934713952,663881957,632599346,421937859,80126357,630221785,569046700,937107372,752649918,585156064,718563744,65332525,832423029,129284614,639496139,247299949,783549845,20600111,608130552,503720064,654457364,121975754,941196266,792926539,733513152,234480476,770518429,907775115,464092470,258615749,841523888,655650041,743346916,251129809,80584433,419503018,4057651,876422621,474145927,146278303,615310126,15494249,34954713,730319619,902443257,775983554,867386577,644888600,611816084,864488139,699222321,144038405,941903884,332161556,804211255,454834704,860381581,853708129,17356156,504762510,588077631,745199532,927356689,50703441,141355351,795116085,839244117,460070633,746554647,927755137,105422482,255562168,628568219,582843157,351844906,212338324,867862367,659208246,505106064,571278479,336293624,957335647,532543221,11556259,476274165,684807367,917857243,941585535,959114012,33809704,746476528,202614731,471925306,704878079,937580687,169177254,715557891,640632547,415159179,494814328,622929351,179230758,168688600,67958929,892613130,305159819,856131855,447687529,584850431,307388725,51980170,465279438,635153704,436052599,459833208,305607911,809704308,331011406,575593298,154548164,15456630,725339979,332790185,798409729,390635560,516048593,806442497,806419732,99813047,619668798,501558269,584920720,235173010,470068489,437451639,863952974,430701312,170960341,642234349,450562364,363533625,96616793,644075843,220648126,686713254,833096885,649679940,833524308,141910894,925326593,522234173,136721829,140664676,882283352,537915971,745202744,550922230,103097673,722741865,779858840,363453493,803583104,894421177,65579184,63172917,867551707,935959390,451237457,133272070,968164538,637745087,152572684,98917635,305183749,365919176,11958955,577060368,109843951,103153228,343797589,161695217,259955557,266642543,735131722,306148641,8745530,295477898,768879644,139381325,10613493,819519534,641179843,541946476,532256107,881787573,160255379,380199251,239744771,865428360,394761524,235933553,244894639,281257387,390075632,854716208,178555156,509895579,130540502,289908299,293076240,357369260,364830460,798157202,498303433,139400972,202471230,311817942,870130234,536084569,44318863,656330940,943710795,651894076,812002432,574127182,456967329,386050428,971324020,544426937,160687867,997437717,575079128,279714012,46573818,745480328,823235443,744761803,825444183,471728546,2887538,599319186,799056937,416305268,540342422,919515686,92016365,617410210,453074358,863982781,415089249,523752681,325311996,337732949,531480290,993321403,240838260,611372665,311375859,474235146,843586379,77136634,116731125,410487837,247084859,118435676,679732179,403003180,905712506,888892612,190140510,227095506,254934408,87117737,532269543,607436112,960516811,962851004,372628886,57336560,764203442,225697930,732134941,905648671,215269856,436962149,989782906,800418109,659542221,360433545,964774767,618964285,464319133,233647030,156173643,357564490,786001019,515699183,548625136,316829966,62772785,255114259,457119738,697412146,130043068,755113228,587127979,68018376,66932487,860789893,673938937,2438914,888140880,73863876,859202200,641651527,848126171,161092045,209476688,802291295,562024954,782902906,776123464,39605979,867479390,575211006,196556249,695961998,367869470,387733363,456916783,556761501,418571183,134190015,75273523,186243291,673075685,252268494,9107827,469740448,821118678,126136603,64202333,511600941,622140252,542015907,789832614,656939467,134426695,713480795,63548517,740972685,752041752,983787433,895929681,284773705,611703816,702090074,694809393,793395641,877533170,817085780,923258492,911508492,329896284,960177983,8637751,307611556,751481188,590431028,82161445,647949949,879933771,768756598,400805985,323475595,401755553,215727652,782787878,133349174,629706023,994654618,518132065,893143347,380342375,65046745,616467892,339855700,249103493,647993047,996951386,231072450,697397160,521922642,35638443,613547147,889170181,159055290,278189444,181667591,136810839,122059978,858499679,513046284,118379330,595408346,885163101,872770116,752277982,452298828,677349027,612005521,902672686,394601909,267035230,399525646,807214261,168973479,142765510,427789462,478100990,474567529,450680892,673013819,110118082,692136001,473498003,807020658,97844133,748431315,11242287,489242038,747192805,206925940,580896393,677679986,884190107,281078625,597709337,577252177,445980562,859798528,923892121,744740357,904830137,180633283,605426040,306490484,866679177,932302622,685246348,51231539,977353708,404156930,988203427,885980783,533295209,856434239,559815733,933241370,212254785,333209590,783775658,893077905,277964958,392685955,244314377,792953602,551017239,811545593,531745053,588633026,392900248,240616919,64055942,572089483,569852718,690316259,613253456,932703914,866395920,849932096,115821108,539984380,182968663,757843948,78717929,704112716,672978054,264705529,560199590,959552904,524787331,481663386,751183764,504554817,32943061,425855969,11090862,837736614,898955978,784724064,454889428,897342676,873768781,661825313,724189331,22784617,600479263,781641959,714541874,133565244,7655782,256216149,11849818,528107699,706740641,299650232,235396744,53175388,195914450,411951373,577939208,957282409,597861150,4425120,715211746,135114652,425790102,651059731,87690217,629241279,527307175,58066311,266034289,454793995,207432973,875049194,343438856,376455812,370420353,967488751,261176200,598553015,773247991,333783344,768527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3285,44543891,878009975,546816131,607083072,567830825,495896774,343230215,466710608,110925755,568507192,511741554,539154822,259300248,784776217,507158256,748147572,470723746,787424200,283775753,938948185,400405489,678323137,421720518,629777939,661110408,637956226,936434787,536525124,777393552,297746411,723130209,266317954,501540514,552791166,712167965,128330243,909109503,557292988,785693594,52608512,123919842,186985247,200780458,717485767,913897261,780397382,229547444,977586160,54289679,972369537,424880281,476506452,776423317,552478956,504473826,352961703,253975132,211581342,244858483,715417174,936862665,74749272,462815597,184769694,677891579,462323909,645387423,252064915,84472883,849440979,14876931,893832788,529266406,539724766,144209659,368775653,355908938,945524853,459159986,562903420,104052054,349491660,102766427,677676347,878919245,712927687,415355400,247245495,424196236,497204644,992389745,44551275,705169558,551062513,792625596,259860722,655199048,342722807,742982793,256818528,50302979,338776591,368559494,35345648,66608940,481702743,728875340,899388919,454357116,84483704,72411268,383270272,177099166,632460080,766187006,437806571,41497314,781089865,31841067,317565709,444673715,824692933,394989468,700797608,377742676,348988325,492404922,936008057,586002844,567424089,681602717,376305415,518541553,737546562,340825843,921159963,382453212,852523349,611454382,618942651,362268145,591393551,254587350,458405525,889716354,2272487,561126215,831398883,151087003,251918556,941896527,996227766,652300962,422379732,21727760,387011757,365431625,434336307,719072763,755669054,113346976,418760183,492391598,363737090,968154321,142226741,722693299,427165883,500384007,70456143,503296127,590074812,203973440,39139068,845512287,387302227,771708528,925787312,947729981,494362802,585357241,926043897,424159728,815933476,237160523,419905996,784886406,820269836,620275252,982337247,509295801,952930448,147477234,355502383,883059912,833548754,745369879,395722404,187188651,470898778,546827413,327720957,898285916,904666899,75543561,365253680,445418910,303760526,268916265,821263302,716258216,899619459,587036034,77608800,587486991,656830271,745083086,252259916,834678640,584857109,804905201,157054542,584403449,869689976,475215171,873825602,663341590,829966132,141745915,297616661,183431243,717479439,687619835,951551739,297979933,420882573,503238816,526281891,721331325,341127931,665131556,94048662,898925357,70011266,581484808,614801554,201247088,189311329,823249917,314415507,15168777,895773245,805152325,663375267,75428261,331506518,513991007,605619052,846625209,64295302,607292168,893417571,311558736,918341423,297727891,547665683,91610491,251251256,159680827,159950941,444486957,540301464,223423755,395039370,849448834,374072589,772475535,981259013,595542024,363801450,34890452,129984721,147126572,70233149,284067777,233665901,502050457,562185670,956081092,523530649,921426487,55239417,322107058,446986576,670749860,935548381,941649411,475157365,381873341,89562578,882257186,267506231,774023440,429258641,658810900,731486248,335729184,27044155,34451625,204477590,270792889,24777273,434306392,302320149,472913490,241697166,473613209,37293776,790114372,94899528,894085735,194383091,523619471,141844730,447333204,924960212,615751033,779527488,59810740,917328360,325932212,368814412,691229189,853344021,142303037,820873535,97110397,34322217,275747307,895385315,114440811,270597205,666789395,692197132,143013599,412214473,568343525,985296053,158838528,909399105,281834860,742636176,436908933,569418306,83094560,963701347,219193126,832895073,833160111,217520675,45536649,736042113,456957543,461116780,101024502,630811463,650992158,881418080,790913208,999509456,477838579,798312641,939126042,43045757,130331827,608539215,431626930,340559305,786905874,29461975,793252793,333945565,865321041,802394823,332033281,481578237,792409783,978696150,240058331,192565877,122572844,402287361,481651501,332958478,157910770,703454874,764819524,531588444,798038698,657376558,415468747,282957665,725423807,146370273,836792499,281040767,633172363,539991856,935589803,28119236,823422219,281327893,758458539,788436371,343302779,864430401,123227146,201120283,227960135,981875749,105961370,672289898,609270592,983954753,902329832,63158316,750638331,817252626,399377616,274253286,419754059,555650466,867081102,563425604,480917485,381074136,555696957,908029984,413811211,839218295,972062698,63679095,513885449,504325225,784811802,740001140,290244884,47473660,179181771,468267020,77425939,711777219,451980214,958170751,308049212,237906484,640524837,581298029,45004953,939404435,234130405,111601716,998132705,714740045,757213666,63489059,825853846,101701098,93489219,184159400,9078645,555602964,540865356,356671651,185340449,144045579,494798794,336615429,675738481,882651150,988156876,348287913,411189636,271262786,491642208,958082317,293188301,542451906,106716848,26639520,757394505,449183034,826042346,813509390,589353512,357549664,417752815,291991212,170010436,976312810,321870478,243866176,552901850,963369335,649752016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6832,385547189,898469241,166095248,225574809,144546831,181235076,558639213,962350155,781049174,593428404,347588328,806798126,646158925,807435498,620766130,712460102,474855968,594398109,183936000,72922488,440464968,827187429,967542373,634080757,624402691,190846863,948910447,473920398,909722273,318312747,961294651,428450660,10121822,217724846,251980775,24920640,927386823,977883783,994417109,960255541,27569140,992326261,232343521,540591271,214553317,582388461,926916089,424984250,105415035,918547318,514127991,468566654,774916342,831640827,169395528,503515176,389750393,40860051,384589739,886281263,115885787,107444942,621307282,501747593,668116672,884949969,833694603,289198568,521809199,751133550,139147002,641533774,118932866,245004818,257233995,586711892,336093190,857196232,322979730,543245231,384704060,697901007,625689862,49871195,459690859,233257260,42393213,404139880,316270774,75399580,886420224,508695177,872017383,589230086,696770022,866478507,372692480,639125364,755606344,932003023,194099263,110892293,118872099,552195195,260682081,3507186,489245001,684139081,888578950,655708556,549832992,932069160,814791663,199398372,682578305,540572250,192615303,479025576,191694401,528285138,944596908,521145319,360551147,89741868,406873588,616892870,167062250,344374077,927151449,476453445,292344665,661264453,543085723,932904056,924985248,571819261,935663469,274640996,153983809,764456015,64908652,53093198,4201270,969281475,341416847,987760795,908187342,704153947,7578243,41689511,682056628,958027906,23726441,426738032,52149371,942893605,94207114,421892244,542058407,538086909,928575211,64702126,471024105,736510486,631075788,211589186,815597092,577166630,624504561,432058158,378566848,109528241,865918367,473323278,618544960,9813777,75156564,197204284,734918487,427355902,815777981,525563746,594092111,751254638,243230600,186617762,533030023,847463098,204040499,998493318,917590617,466924546,657180980,733883382,870604828,883355316,961724060,589206631,91273195,320187559,19855062,416718737,694859673,243547963,60008776,829248037,613795988,30906540,1374520,587434796,902295363,207677735,456673331,254887450,921298017,452747836,85601006,835115590,279532102,695099805,485873434,473654068,547379143,735211379,295982358,218374053,385807738,336539721,481139094,112632603,896214056,489172986,785634445,18359006,359526830,11210370,875819206,585673466,703169795,281463657,652960069,632029873,348830671,437503398,609329221,450110712,559503020,923441440,667116663,997738182,515943835,196096399,130236497,681177609,8533268,807712728,818009979,209962837,581614482,824576739,396178083,932017487,427681544,535294052,478294405,17517940,928570891,531329712,459315788,961675454,692305254,156769462,313155559,811805189,668535601,230676643,586963006,549640780,162286907,175732013,349691210,346971836,626608853,718772507,774074219,384062788,313647724,162179844,722644878,944451598,206246797,571300511,800411373,958298702,708410542,481272498,81853489,691717110,804097706,992885309,405855244,576916157,35205472,72042959,824438543,837964947,444794316,103002394,959079740,219621530,817871904,93194260,318530877,451636635,523010487,107709298,189543433,731715458,436011517,459430087,360762471,601833628,486602850,250311668,661518731,945757285,749070720,777090912,505250700,102036796,265929488,453773813,646049054,374693693,942829136,124286143,712333159,753961500,327871795,86799224,249063443,687546540,498267439,224708405,549660578,705233355,4968235,356926962,92979301,480850577,449539395,298496452,656941024,712246768,796168568,611570854,603205314,714538985,118881242,645732943,429775479,527273821,935313596,775129555,385233729,736436659,948496591,188731548,788884770,688395344,371862099,573107016,81903490,745821437,474393397,348038468,480408584,756211655,772074807,948599352,192628763,845307544,1144355,943172096,755392006,624198923,930623225,283060289,429200470,460781037,531703744,226579087,197045461,558494667,184486618,562625518,454508388,510152103,583612768,479119886,463126527,446715291,649046949,177948781,387871424,151010307,741828551,710619732,160498622,774870425,214275281,760280353,480103581,90503728,7783862,256984756,885392441,795917095,438625752,992839901,43554742,489744689,324804079,676600046,395673858,786243562,999986982,764180636,708751958,84357727,12146960,725223078,682896885,383325539,502735216,614868093,821034637,142839226,67239274,95793755,287702673,838645685,808811396,813978975,755208990,262083904,604897339,350774390,963829745,174639055,41229335,644926128,473727607,884975294,64731571,375428676,229552827,136400389,61796719,131739733,462714040,998197644,499932061,131260793,826983010,372069879,441395828,747511036,170545111,20795913,330442775,136238916,19876722,621647041,188729906,709835381,920416313,278994688,66121719,545750628,410656960,920067920,145699590,104675247,623256070,377221126,143998502,384707980,407872400,229909982,959468974,153867010,992256930,906210177,147107734,31378098,663308875,610858593,286270282,290264183,50225292,69353149,424585577,930229430,51181861,170507085,2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520,762105973,92154670,855848392,904545801,173920438,977248051,988074785,839297593,164212421,394278543,408674609,789080793,14867222,57595615,201002963,948734431,789711528,89244543,85591049,435247465,822015221,253022585,270804450,363066230,378926994,390308589,8866526,851908820,299609755,222507264,444192924,537910027,673604532,640769575,156505994,987605126,896147939,716713542,11050082,699831240,130478557,677496515,971700968,737655689,252594337,385147379,291090962,801303013,916430565,407224108,619488348,210283584,460774638,560363850,558621380,303263429,632244061,276824824,403698276,422244633,201083819,699180639,362725642,578935212,337891419,782583752,102496868,602172560,840181083,463745,75782779,176839739,523657704,702422900,716353463,771444910,921132370,480355431,884655280,574108780,188029702,336256478,142666044,403150434,911155017,528174817,594528626,348923837,577617553,519228368,895657480,676477431,118293754,154847418,839505396,906363026,943509408,95792040,63063198,746114072,29431226,911768949,569160256,775040862,444434650,82036532,271010878,669204880,986070868,702747888,917710779,948167001,468889129,989882351,27493365,965554469,488562162,906624237,307251784,154120978,54133339,983544857,953439486,442066781,880258519,776442644,547997183,462891268,8390681,106845324,128438182,358259765,144776721,446853993,26426463,111998378,694502557,451813569,516852208,809206946,214613709,63143171,834278553,299243610,255794915,805455566,413726862,736103886,823520705,394845987,158578474,850100134,500767508,152935029,664595307,833619340,782263721,441738313,569848992,496825620,429154102,478071485,113761796,454069727,584310676,207559015,218433835,510341933,73153487,609687220,469222560,424545566,30362906,7812709,922774038,115815820,8221339,361031727,799654354,995410098,968991863,575941216,492613973,413667738,847630561,38423674,670008762,961054268,532863917,273598220,757892285,109478053,833375051,424070322,720314853,894278277,260383168,913654337,455646082,309067560,742487223,524375588,782740439,61636431,210208703,89186912,517309495,224739453,838608553,969600870,331126642,629015876,585256234,839564135,397718612,370641168,290296884,63805468,990709331,13526014,434687545,961291710,309759470,598981188,914752118,740196121,486484831,474204165,149217171,92982574,219657410,565482674,556778291,408089076,293219869,739825042,164462935,896894174,233360571,806151826,791789624,968623082,849977752,963593611,726341130,606908072,824478694,290462680,208845705,330667002,800414130,450830350,77681720,987781793,171198658,132724982,156319935,484912821,96141987,251458537,820353373,505302180,172931483,414126023,298122213,981689205,616415215,75514999,852156517,990701104,830678611,764347729,254509628,321258913,971963243,733154229,83938005,733268106,125783924,202922478,53214675,846084409,612580145,86193203,213564267,568459325,642096704,653177652,490639330,489819699,471562408,347225863,616038334,624122,457800409,732671591,832883644,82262353,539188228,23610500,317202323,528448747,665354179,523692097,899833946,587919131,331244106,793263674,472707374,304376751,556272167,892954332,969594354,176511458,935338344,863061398,1877139,542498295,247869579,327888372,827617204,816458564,265180757,718673860,755377665,537810049,820388645,738675696,796393016,209865341,15931985,444085271,793930248,849320872,507353754,382458174,303725954,420659615,57484236,364898604,534064505,407121933,779980838,169524866,449463930,5855413,641621486,708956254,613402703,323301241,495392062,310152330,275612041,86039582,219066288,844266531,939443301,899072049,443421781,905856793,568743745,957160181,365247382,941728021,158439893,231055047,783544237,899127439,548591605,102806013,254319318,554974401,20464437,532664676,6341741,100830875,27280728,904380869,621869433,135493299,49702590,408310240,78998777,730260491,704937961,187311370,934272008,208665268,848023930,342167512,67312656,603293100,147744850,66011841,415222315,245678347,285229354,87861304,602017639,138798566,513312532,890818056,167581221,767386158,944440780,685213300,896893364,108064792,934235538,711140432,274236989,972072599,676112247,334689011,859399479,446481121,329046134,504505668,16016494,411663502,634205603,1574982,299889393,881683014,852823514,383998133,318495087,651805890,189564817,288691019,832133417,837899906,436752188,601121479,598389477,936713551,925383976,112600996,136486178,390182790,688368530,939029850,922489749,831591447,306918979,644944945,205594649,135201590,74238753,555831981,27575647,445975947,378004656,843075784,268577071,820298760,301595987,136057371,954175727,273521847,138830307,17694531,220799711,344969959,666612858,267941754,497879954,80108854,992643981,537166377,344322355,892491344,845834134,74362769,329166536,867119821,772494314,435924415,269536059,54668460,577547085,479798176,893407108,612990856,230397371,925377307,685317482,671434798,563337333,133086091,738466873,722672604,661067008,358642746,596208263,242353182,47375562,925710536,837457330,363691694,105151737,419381985,86849492,26126087,459354381,345266283,498358864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28,554489934,810151755,273095197,172816595,852665070,790009190,145278598,722636634,330843394,349285014,662404786,904557842,562929458,235958750,803912979,117778786,944287535,323504442,862743717,181664830,150420964,908963226,511908121,539438102,995405523,810337119,51487903,795889727,939756026,513163581,574490252,730302519,286451506,307455522,244157616,617877232,979185173,758265999,341047083,384205504,839970167,954486451,291133029,120860997,61672315,690374728,892602660,737576421,311138282,178008597,604525150,692803599,425109462,842170288,213483673,870275423,328662921,636249033,973707568,841248922,446119701,782975765,77485189,389571951,149537542,717229448,98652248,844175219,67895743,655918864,694278435,551779768,740722083,792744688,275440713,864314293,412678453,723016243,611897020,336635277,484371428,150456036,45103793,81291764,987037722,626390441,755433069,926203379,844145053,785856019,693546325,784068521,977657671,747354661,548699387,903155537,248011050,729794674,370002643,825691316,342904766,910027243,153224629,482471231,789957512,253454593,189561123,212086545,84313669,650778395,156046034,942002214,31316161,779572726,223865437,745047752,358555999,325766374,101300740,21828818,767823142,568643638,277803993,877060505,144726928,441269423,35861401,790132868,50104298,604703351,906712796,171858858,108189307,124946828,129824849,24504127,109247528,59315063,741214569,577918531,793059080,190972447,46896600,293805880,358318668,548066783,77423572,644970230,722898803,21181988,114111136,334560720,717959857,428863898,257670636,975922859,528945919,234722185,294453584,410488646,148173260,620255162,469687143,169555909,203701147,559566789,917260738,331232694,432622708,757523912,963480487,430381008,992981097,544324095,676168121,913541632,131921408,8234638,301877640,402036856,718431512,187011671,438688079,60774080,916344961,320892433,178988917,191207927,619313625,432603377,326907752,654200252,704113435,595262911,718626542,328553475,13090769,166374218,702757791,292213431,465372235,313524648,388102997,376949369,903186411,656824673,195354978,371843212,61257642,895898724,160234281,444873278,348437781,51080127,933240189,337297318,533082211,988001376,438975040,795862994,928666022,392393954,406165070,715769493,550299744,34114262,105587501,755282802,596454479,999079432,908215146,703433229,2964384,725621577,311168512,964736655,185483461,346755397,100750008,392184083,380431592,723011152,985510625,424072646,395452471,310674339,51592582,174965950,203404234,737316987,898470432,982321509,120856378,589832193,363655609,680194570,422676758,689543468,627366971,459702434,127507569,520365109,567686741,956559023,462282872,876497387,834757110,437208174,775156628,845770278,11306733,993141287,676946933,148890976,499695272,959959195,639239147,536269536,550715176,898715893,286122166,552449191,330022201,311768040,469703800,626498815,95659806,213096207,386646134,748617136,793916070,941876269,355362269,274577832,252928092,117768730,651316603,686349911,139448010,52813445,575305822,768506018,675433600,464682573,609996870,420439624,629892582,11536783,897134430,327750582,227778301,302052577,413364206,443432409,277532791,425342568,519526011,748315865,761894627,588793498,718741865,764247426,913538529,729393587,966185270,456756933,882563780,760300591,530028483,516939416,414404298,595561858,285974623,945093568,404579308,967380736,328999977,280051323,41870386,536701773,444379702,759613430,87692456,45665484,936060149,67173564,777053942,306510641,468209276,146704609,368608188,634198913,536107789,858790154,909122364,157461646,516303162,844668998,891676695,874833037,277244758,611546771,797298594,966922789,602810443,439531251,585827605,219532387,290558397,179021941,221824043,996221222,989496157,609084109,122883897,278691591,330653971,138121324,785088456,184180353,681746097,560370938,16097648,377048194,974713356,318989917,479980579,217768473,463486057,507558997,892853996,262868722,451950996,721230055,120760550,794647457,260403879,570412650,485913689,659181316,694084993,820685459,512566367,959374239,382154611,976636977,209444502,542059405,155342502,802783531,615885920,857805907,377126143,108079222,393212813,700930787,927361184,272630684,103081228,879449410,289141193,998061491,187300930,829968651,765353958,770240501,842521776,269501947,863117173,977181584,568149559,696577201,827197955,342190175,332314249,281211925,530106028,562128150,378860429,712488243,679567310,181750998,428545939,321914977,105040786,302384063,458042348,166262987,284420644,623102249,487780890,632784465,86828488,840939333,818662444,35435673,241721356,410126929,348363753,625490182,929816722,853196106,194114919,867544291,751755127,549151290,521299815,156026604,871898498,835668402,464547956,766819785,696535233,325271254,928705435,1650248,736862364,296418431,125700628,418303114,184918735,552572707,148692849,54013296,694332218,559367874,256526125,998152951,587111411,546204740,776808634,536685135,474684831,499222349,657584417,809608334,413911534,837396977,178620964,102727815,384854746,498942338,883832883,92100372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884,30784321,540276024,369744653,826683629,654932420,925767928,81893267,634535803,249652297,474891909,70401843,257836261,783486694,232990862,833244565,134063057,648047603,894085733,609470252,247534883,364780240,318691067,290731846,2071533,25574282,413935997,945496329,517237824,525393927,655040230,102224646,962600620,218170545,556333022,255393848,431641850,698294871,962125260,130893766,765722517,818712390,691427429,233948389,32438665,641091368,335407292,471017117,441071760,941721062,410178498,430895760,290339972,255238062,318483356,214778182,764579912,843725571,602851900,474189141,199514852,875429643,946955511,802751544,169040150,172203028,115248576,170103901,766159570,740670298,143368288,244741754,193135838,76369756,822833522,933441752,680494119,664788546,342787656,520678350,552193135,138569085,616044396,33338417,988281243,132794850,881219612,323069558,619569030,538881636,3709588,359780205,852160676,588465572,82888595,16885912,324373089,134724654,216195221,584646239,720855538,556904266,909798506,604384403,636149376,311752901,682910833,851301870,515523803,226569463,734441273,945049388,776134576,200054563,387858148,555478097,465175359,957243116,573962508,256224837,44135172,433133992,849175648,196977597,150069465,346381759,73339563,365704887,682655493,820243284,894028027,298501012,444076565,433418360,252393474,534745413,260547616,852595621,752013585,950036063,497654450,814815044,360990077,337699788,270926569,576970039,492431117,884363357,18362574,638701552,540947337,255538687,569196688,161799920,942437667,372281201,892406078,231942792,784567815,267210514,211772223,542461745,93170461,33310444,881307808,148187968,281636422,943236468,793183880,496637670,512420424,545054548,84967005,767212746,827368377,698044299,478305359,334447094,675448401,634225084,348031672,328291524,980001984,228077596,481228075,758512490,993022620,928540667,554514236,961989161,886037823,415292998,452895237,461936048,734186473,819974330,586426597,253922981,282714683,216286899,462786002,275119483,523379893,71392074,618250903,651303872,694048534,443393176,928867155,132675995,918950779,715849627,762996354,551774439,488403585,857723771,93751560,155226248,921390848,418987959,782453099,730247674,453042798,465078653,344991489,859082519,414946411,875100538,525324409,68428078,394637438,20487954,179651220,729674823,193171367,253924541,798464606,519361662,344738127,980213757,758937,434376423,653563940,384581864,658473928,626977704,546932607,210404545,205196533,587884993,526939955,478303053,832296869,181449886,986435160,322861031,722331318,287225798,431262563,582291240,900038102,22404059,974989234,156615512,170450500,331518437,968269995,866882914,20469708,315073391,11760418,37021043,682556724,858965389,953007004,611651975,216708650,891572677,138607848,500229836,68646640,530503891,990257855,175422722,503975475,434962534,824546075,621505644,771507882,421792766,614809611,560087180,264985972,916774259,812724948,313085586,649127466,474382350,198799149,97732690,55849673,925831265,502828238,994536677,663961526,31149155,689896323,449910646,198086880,577354276,656591911,914442259,444404652,920896167,77958796,991162579,135026755,160863509,540770187,35129249,131784721,839958201,789597879,422546008,979998739,281745899,663141925,462498647,46604805,250234703,149848719,802840910,435557167,317092462,397915301,628031560,734543592,855014934,337116330,377480042,798818318,806618121,801483137,982008567,845189973,773779428,288203595,441962825,41350340,977685642,175194678,75465080,413984940,196932265,929910646,971411122,161251947,715177679,610130619,877785349,985642637,697787896,838534573,677184776,647701079,774189589,714441827,930163041,46539102,835985259,659773427,562932567,507636352,892018857,300581964,327812022,919501582,269681262,125647385,168023192,516051723,23081142,974870590,458445025,179328138,46372717,396159631,39690610,30133311,612722621,190664025,512648938,537798604,75589076,100316392,561955840,785802389} {792989830,499549413,794617178,574089005,411436182,921342115,946017822,721070875,19119666,886193544,747001852,828203750,243122586,540313162,990413911,841373622,346779531,993703839,855241617,50645604,290913739,373456090,445775764,990806472,573218699,584574447,546113770,718500821,424933950,259006278,502699020,342034760,190148945,165476465,480835687,803701340,586271773,319029247,838326410,735740251,106802687,918052425,995698375,991992107,761668589,481109512,70082665,498938658,11264163,79817339,382507076,496795557,659002843,258404328,106280616,362586644,803002782,793916363,990822696,412752812,239062713,96183186,615714642,797185840,776952390,320465987,160846103,777683219,714838279,555515755,670997360,81022749,872389840,273904231,419927775,16710128,64188013,760422546,332885674,163868415,623593693,530021118,434927824,466207960,46163570,761115107,963384703,870556161,524062951,73383177,193305083,349513175,825478704,639168388,744595201,550912527,284127504,864700658,26116479,491474096,937797063,664491776,781958999,159028862,737045957,860575828,207544026,715319625,277031738,450214590,95800761,526412483,874792636,737354601,90067243,284437094,79197048,818078894,271202793,825055116,905865392,998851214,9122155,782420079,144741962,358507612,421156181,602245093,195007311,889183851,996686411,162931770,219864286,850557190,142682060,594867161,597404516,892017704,175209459,249252347,261646372,560495107,554663998,691529183,869770271,446665026,727357145,805011331,864347479,911845255,416721565,109985142,465775571,244023635,335169093,775742403,946781104,163427730,935558029,557105900,612087005,297474454,276063673,420045225,319784209,466950694,581633681,879287499,266540944,179550603,167674376,320097823,407499998,74551017,589902786,661969776,476361479,565744064,290113213,957080435,254762566,156596,566657674,631642194,217365713,862459924,46292347,305386310,29088915,978068178,493725780,705966567,113930270,747929124,841333061,988713986,541513364,602037201,72790693,948750932,145556687,868425669,116951561,339781920,120838154,493540743,64589654,636206977,281845878,211329381,124573525,538755079,947705182,928502029,577550963,331529230,907655098,191456246,199450350,9454924,955063783,603016605,941311472,524388432,479679539,750393957,853558853,294063904,684662239,548741901,191088441,308691750,403022312,83086221,952586900,314030003,486465693,497712586,698282974,618842973,48520577,15059952,64529137,59321337,573254800,348843967,606865792,79643936,146363995,300115510,178194960,121768403,302254314,396705658,380923323,26891276,458559321,580978892,319098793,30413888,815490862,617190891,145767623,624621008,752148745,612260477,547024843,276515323,383309564,332504289,800412586,979479245,373682238,741151768,216804940,859034203,162941590,214542355,833810639,625634391,392170122,536140572,508283539,591159447,980319942,210664611,597873088,546608944,73299285,247059854,51492934,841592841,21667851,845147406,293566611,134274814,821738970,770457630,515215139,39968214,722650693,459730393,291836828,135021187,290837088,867869798,199779517,945453534,789885736,655188998,204831885,59091929,214822399,89432956,756840949,3527072,610069516,612540231,337115014,531756189,663015431,842046651,956496215,423173008,262992208,339786923,240467635,491322034,127765795,979330067,921482473,722622884,44323151,250863357,180043961,165045405,266402855,436944347,193883447,283176351,459202558,862217058,852685616,518932118,161538777,519989473,370900046,498677569,456546066,606513832,682706341,228792018,574899210,168077703,907875292,325792444,73124665,140270926,472461138,723009926,753157761,321131814,501946869,607402670,236997987,877030246,814813111,261638375,267695518,245785194,627322345,896465229,136545438,330962924,313885620,955639153,713987376,686339722,913422018,321004074,439106332,262346897,465930061,425228936,461771192,249892534,160032322,560850547,582883903,967499909,961293686,200280305,248358996,821905195,455203511,12683319,169249150,448286314,476932592,935834403,158131457,765639262,59664051,585081644,154672902,919221211,501079562,984262595,963568739,138532899,518976474,359050820,227367258,297383975,361661891,971654552,754818974,120757455,544172674,713314564,313632614,349566200,248452253,1511636,584841109,653166123,802434527,850310615,55437683,758464004,220485573,667550078,296568376,872712497,199633590,779665890,815373885,930109042,770959936,425413694,599675791,616269418,106271932,31341278,176148815,501790173,203118190,8061405,416058447,177788675,301487577,824294777,110523263,825545420,448111451,684341371,127189901,94657425,455066328,869413345,117585624,372169007,932664870,644313703,751978128,95725707,278192948,441781073,655344692,402321182,348359419,857415030,937732450,278841004,506569143,122012846,186298059,205488758,607299776,165659051,540298840,650026319,436526655,769884815,441035685,125270742,824577552,474742558,306012550,427535202,454018326,15753974,854845940,779324834,407628242,785116690,674380381,544691748,197290155,250210354,10097062,212321354,161601306,791115168,252435650,953660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0,752237086,676083369,598755696,198856179,638766665,505499701,712970066,493400262,490246057,736630817,323991631,295624676,577553448,216318975,627619299,448740569,766270957,820716626,992714254,722938050,251157604,260157119,55719124,919517894,739400910,208937429,425575034,209140424,779154931,882481122,237916294,987681343,30893896,670703539,314294988,844043992,544160348,123615190,53918805,658293511,717444925,252182521,54328012,688261510,244777206,345645519,524091123,461620482,761201862,971898341,775181275,131333129,738432027,403995522,395669658,841731704,209888950,290036017,32563647,764974828,816178402,225375592,308385924,947079074,258191050,143333195,692567434,59545006,855837472,431711269,85207688,873475922,535918723,751551011,58908843,201120327,86019426,676784744,535467080,650438729,886505604,947781519,857498925,434133189,263926921,346001738,558694136,909625254,62714902,573342389,59994299,399954900,595467562,104986059,345335842,357913472,604106766,532949278,919595519,129101056,956531811,531522419,281749225,767348656,234534422,172918235,207250374,668641970,396484012,581335677,75461483,300589253,790253542,474136701,812811848,178486799,850382355,534965448,482195318,75831435,190335111,357858728,397215472,432479703,671702082,950693777,732998983,105227168,22253250,88664649,154972938,729781073,820159055,668165304,202813084,599512557,909789882,452576327,315528714,154057540,360456535,580724065,417600075,943154248,129775213,319406306,151898979,186238476,796478591,409351551,835983595,755361177,910576642,252717283,950718934,869366957,671193416,244950121,307006879,109214411,305310052,623214758,266379074,841744784,575401554,716691376,799419227,817129290,907531895,506753915,670073604,422406243,229121500,659353943,182974534,125947395,536399201,626894790,42642330,322723113,10478912,618410340,984716080,98582682,72274396,688109385,956723460,247244749,99159520,605615366,110601543,52495198,344668490,598176829,211258495,899556528,416992083,827744645,953682345,387476929,496123445,507360914,314605933,910522122,424135785,332216767,200240137,952486062,446764179,934571088,777827335,384433911,213219522,551109128,596039156,806595424,133337704,137375864,133849187,464991915,48043816,768247077,353004273,918528422,582285617,230553059,732249816,367677327,571502040,291101839,153366447,501975497,901439600,163420432,850749090,345710098,67590511,552581632,720631085,654724366,913992467,852839024,398027106,329783127,61210666,82042240,509574593,318190426,350224057,601463498,168510944,920261017,315973848,743628470,960152707,251137623,603657056,85818997,181862828,453622348,178766835,933110947,700435220,37651776,471458039,815355809,479438437,352687625,274823630,356778096,857522749,585935461,522296004,210486776,99637257,976110580,803397305,92088133,424239927,713482172,322781819,407052895,151357676,211689654,57983908,871826569,858046220,744147326,593569018,922346476,844647497,363063067,252798924,428282947,657590331,592433526,474450003,458583149,311226579,819276134,22665181,444495103,99536616,496107445,138227563,73091731,52593383,267233890,257255275,688977659,400768592,898540332,684153889,902152725,426986930,591747493,208973627,561113978,411406761,263772115,337453565,846063809,750858183,919466910,511920404,88487514,910562039,196533047,903599109,559409523,80166198,224088136,56206860,638972424,616911197,902778141,816973995,93627435,760271187,371898099,326642833,7607143,245550373,291683444,101788412,75004855,278412745,581449494,718900400,346754307,845540679,712045596,425747255,721296532,105846907,274039378,68218141,715158115,634404594,119322406,101569208,106807923,649553581,236062472,989197852,236550277,710647722,983763006,320003425,231853088,633320617,98358753,926449422,721685767,212748614,657398687,354058430,924419871,125337430,687586339,568376161,427141078,686333463,445185556,689946527,809640137,339451467,458911611,538379910,382181603,415925729,134515335,315721386,750275535,204553784,296201049,830861505,622336042,560742554,774514621,337950584,407720707,136781588,720538325,995301712,322560005,759420844,589302435,741400178,397847621,811601595,187097456,762181041,41123269,616455434,142897900,336488711,378906249,982875649,857490857,105906806,570552947,803646822,612434980,27942449,405391292,461367395,896944578,509259379,754653966,596274706,854973285,354595828,109768515,247658279,457520979,31443450,444209260,425772836,670677852,114124777,219973411,350427208,99793984,4193081,750839751,13041186,908150180,938918952,541461023,893261475,696748198,799936470,156709297,700131362,674990747,967617752,68765862,248169377,377359707,248795887,551978769,225061877,375069823,914472108,107000263,432194800,742303137,17968783,366828897,108193434,852002760,723846324,926159173,765417683,6876264,243605236,787616256,737180878,850727072,48805670,949418304,411393475,278095461,463744521,301973691,119455649,164858661,866635840,642625067,619854304,419288082,14549497,89478380,401725176,329454278,35371405,392478426,990655131,769225129,938673106,616973693,477571355,51073660,401146469,502007700,383513757,497637778,53546444,463033822,814446047,743784103,622030550,710634206,275730496,37148181,330664893,44105280,820606255,863671728,987982766,666545562,241413109,427255726,867574064,913009727,173743946,489591058,91631797,148725086,505940453,96414664,447508013,719759719,537343700,823823560,363609434,642597306,795875598,150498664,907550912,84404098,805846590,953926573,837432550,715526749,959184563,454487125,193033855,105579953,219232750,983814200,122933443,704240346,213475436,3001312,626841727,764783108,147560545,175395890,181793296,245719480,869973960,53663334,879165878,3174697,111651399,549907920,621894202,638175814,421146101,951848860,944447742,103749340,728312310,534248060,372005087,572909127,613343679,826861544,210183954,40025555,754637293,785720760,478542263,453241479,70797493,868835332,145899006,78486964,38774511,944316718,559983427,748325292,36850373,618868775,228092369,165376277,225730842,620960735,958954554,449319074,657004080,914142416,726543287,733169710,874850618,785990497,100718919,941639754,665420709,251438628,501702922,386931293,254471832,368384296,966126526,848826006,239276621,134147803,592392970,265278824,579496663,246116436,454031834,782152946,63158041,235278204,237784416,385210550,752763603,697148488,808046807,464468765,100989799,236511827,612607681,550313803,383131243,913424655,990096024,665076172,795806364,863763614,35603794,649812859,118607869,860431961,486398727,768793184,651648861,851203412,829680528,404641320,340053097,438257233,116002341,398120473,919268296,111292048,693587279,684546775,651465213,70353919,35648863,100573791,101832803,696042122,998678331,900272197,895258804,740244312,4333664,335162002,901603931,311930143,343752027,878424598,61388838,639739859,59754928,162948492,965592086,624812816,169636421,840632925,127390550,385191901,767486363,985813124,35677546,974051820,331474413,343384385,728427711,134313934,284465700,327320867,471703395,722799592,580236918,335077438,142849994,832116937,996536447,686578043,194416766,437152348,382563971,69249468,130652471,546662665,587215810,389737621,280102930,384345875,867156913,826902767,544464571,129495192,308795814,624854475,305611005,779725575,93888579,152932802,60285250,214655395,363864658,709040710,655761452,416531774,525054839,174397265,231839745,72644129,68513047,916459343,851064172,583684187,701682250,207958627,329827347,422038093,469867895,492270026,450144841,387445265,924077693,87873114,753769338,274496104,435076246,568050739,615435725,626825012,130253193,463760255,111751112,703661104,145555329,995616316,758009933,209235007,864211325,644174194,640465185,219846593,242260383,720965902,735191464,116598734,854665335,917268571,961265905,54042198,132072988,488730799,131147783,480454794,319578237,112499434,231917014,366688286,189363782,978219758,80207279,739034279,970321577,68333121,990372273,836501579,339948398,475582495,71557845,400338674,463431135,548226938,131734167,592372872,578728108,158739135,350982788,966841030,999013907,422036720,171976233,696896921,234297196,880944710,36291091,511568639,616954807,205081518,591178646,93593181,710217462,190355245,860195934,702508079,712270467,916558765,589095086,464145892,874854180,546155143,179748829,209179431,131138279,14206243,802011420,280904936,301137229,810334717,607378771,477034225,511411916,532527648,468176110,935736714,111168099,876831484,490153065,596434147,923065063,962400012,37887456,539711403,14589178,363343853,389529917,348461201,964012271,969593464,854127804,640985453,215771470,35133278,101789752,322958058,238693953,889191383,917431614,490794766,711176553,609223299,469969373,487743407,977719355,338998061,327485580,744909416,889669377,612579353,52529173,741767823,340863627,784551925,807945388,635573928,450766470,489727295,522008650,967814165,506821439,92852012,948872783,472318950,281305700,122377177,787528092,94716150,554150647,5744781,527628715,134379151,543127806,481020046,741950847,135535251,630593761,442164827,534150836,203954960,809659203,981570754,63573974,236566054,595466410,54371400,326599413,721433596,714324660,814445007,219835955,566894445,138123671,822200668,804243701,148609659,320762781,458423954,453610233,263680076,908577496,248261710,929120067,19259087,446744488,368413601,909080078,640110927,304644501,911105954,256945740,666742346,41689409,334284995,990029938,820892220,878174897,144006100,251369564,797517381,301890375,820078874,73693224,115682372,454340381,98228677,81112496,215603485,250077517,934141800,386220312,900417501,385663408,60668894,506448471,154714495,178535265,896978876,703182293,857643891,813236139,190706014,509476640,984554858,57566093,391492728,775832086,146039186,117700510,812611285,859184783,992184161,635397932,870242498,186423644,216019071,67306151,301530915,181895835,473291713,969427984,777430021,361034930,354662097,25760007,941106980,205573962,658243533,513759004,597421139,75280356,801304095,896981392,228179527,10252177,512607551,284491340,4959781,120155798,720206810,223513833,266964360,779946140,585158632,849441991,334338840,618307247,80480283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65656,42672067,3588167,936033209,854581052,378392528,650512986,84809081,109992922,167524513,214503726,341304253,672365690,846322341,660774426,291649835,644768634,509027661,37328773,448640099,613788382,438298763,580351198,785360519,141413427,36933941,403770025,742172307,725671311,216042462,695017697,457884222,556721721,209177579,520184447,957980443,302841008,124785853,598144317,643597506,594251459,876285265,784219573,512895473,733486758,416281137,578374919,445379311,366276657,568816519,95094798,754545681,933684319,937018634,142402867,651577101,975928677,513187192,202604491,287025715,792676053,773080411,896163373,695082746,74387477,910008917,914906432,337903298,516365967,703017421,905659921,986939,835912134,165449155,923882766,284276654,346250736,906715291,250924207,271287516,899993502,278031541,644394842,903080955,277611541,90094246,564931328,443191883,714213085,610260587,54543253,764158655,987891883,772402121,678722550,503763033,338780782,101368793,517284521,976327740,374421074,542491709,400880515,627159654,493322736,31439776,857231309,875746256,555938181,203080090,332923766,724868291,199523083,207624436,561227401,771280874,806666055,626670056,470937249,811059035,713894824,697550786,973400710,851035529,699685202,619237210,948168029,637777870,162693698,583649302,347587890,460807415,458397929,291951640,642802289,809744770,572421192,761741639,404216773,737370446,707083486,582039174,142653209,500544784,103770783,202351554,180994425,384603346,671601873,36953475,958770380,803861304,832579493,269764785,741289893,439034007,60577549,576979142,418532926,798193895,730273175,18135471,404721686,354153453,308901389,220203718,939916873,31819373,134893698,158855442,114466328,272191465,208633408,545144865,635736826,968387330,897346876,974702809,199133205,15376020,883329069,455951664,852378741,590449036,3200501,931376469,408689096,652964483,148596972,91081285,33203556,456858594,821189428,939415512,826071843,884343525,606998879,843148164,837344921,235603832,775370131,254546421,370605531,893890122,557665165,161580800,922647931,372207823,329479749,198447012,592464870,441137632,490192959,92557475,962146370,450464600,44275048,850124432,678824154,238211728,443402365,634071919,374699956,148333788,568431041,820246694,71613924,552079878,373243849,501088236,699969032,325988455,359757851,940126534,694299825,109331533,119599556,339682265,608014781,49320366,264510589,641267283,518658414,668115470,368084590,832249928,159110012,953652557,815074062,797412007,573913188,936577500,7221408,89677646,135604168,5357115,71715112,656696882,128336481,983036194,511556470,867980768,31819145,836450573,79307309,647334998,715045173,357876817,378963045,200729810,958515319,425388191,395094615,108354076,901579516,100500969,321308369,149812429,484265164,316684579,79072435,465587158,181260761,551685890,61783876,69636648,493921221,943300925,271782060,926531444,255982252,166472050,768801664,74605674,857910098,498345572,521683278,751887415,515641467,811152579,403832435,424547856,30548302,218934403,135684853,43199742,602288127,590199703,653347445,757016095,130508922,793373318,163666592,420972529,603465460,422735726,808053044,535284058,773121515,125698285,819501782,503762512,793122779,361698278,211379760,232669399,868197702,810956460,877584370,408415087,745247848,934585307,869609109,310653580,489664191,680320384,575227820,623236412,868863411,564803610,291962992,667770732,974670557,663330834,281746038,130846229,163659396,378740572,621570222,348881510,446951522,54446544,603122004,950822363,7010358,202422909,356547714,236779263,937371456,324272681,885057540,688615387,137668382,172204253,346322131,575108140,773064344,347994452,36205415,20616397,836274647,776173761,125698702,212700241,966782137,36284298,874879179,482916402,612336041,260376051,335612969,693098941,764380348,999858990,622205821,328525198,799682181,322911114,931033611,139866834,979214449,972881009,361689978,746617707,114535790,908661774,83788301,587068718,549449918,150404014,899641366,623713538,321205827,902314829,499929793,206330907,625171170,772366323,128565039,984040161,657235158,557716159,602560434,92371620,460662261,58551032,993746589,169766235,168442011,263175631,477153536,646183786,736011230,690811054,396881938,848960301,352276107,207364892,284194341,707615619,720904168,426060683,394476928,198341549,213394781,370639596,664233365,617853530,407938637,303924841,66166735,831530544,335118925,119876723,532280290,381178630,835558444,282053424,315938902,96357689,684728680,846924065,285798770,820188460,942101258,888852372,143166173,766076061,598038424,471165577,706549350,172607809,710052144,311130875,70741787,236629854,437233643,533015333,284355239,695725810,470622957,611757445,495421644,18694044,582076589,46569937,852690383,331894840,985439541,444337598,762602361,406990177,869295710,562815175,51122936,704372579,825911005,252402540,907331266,476982846,6785317,73780952,185583726,137406222,862893294,464321558,79103978,27147880,746249200,801902811,70712884,3760240,611200367,400752119,756157290,305478918,14191522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36,437565104,601495984,528398619,630647949,518969042,381710277,328076879,303455868,159878784,442336735,885594221,947524149,812248259,721544849,341295737,605295622,577796356,686304019,666370514,412002197,239687374,705927669,354909065,372082910,481406282,998183076,82984838,452966222,444326998,582512162,635242864,53600450,316675718,28096920,743943206,783682877,839800180,910625320,245101599,445728461,851847516,96419590,403817880,7482665,623837295,774819917,525250270,184067549,763275788,316792562,27035745,780366811,880356147,749255921,665305799,212509849,375417259,369684770,801601618,298141993,763573471,950205223,818371586,512309575,391264178,151476146,283354117,147529320,413844972,185998430,547548568,808831900,331648408,986155050,999901638,789117957,566113945,127582975,545470154,935601946,190557091,55521786,33484467,859356797,43229340,754918337,866628024,708545652,93913073,373322687,806457817,162390751,356095362,269759920,685632238,915618051,277415796,421134623,924023705,65015877,401421404,162972277,934039570,350051901,851785525,763237570,259260784,280207307,354558701,522687157,821925788,962812156,249073053,572615217,390735633,843177614,479813337,479998503,415458751,300663747,235957430,705115458,821827325,996714288,861701417,716679677,161724627,163889204,969361993,423362430,446163070,913303116,44978765,800466203,724218328,271878703,731196068,552006191,836321627,187304193,770404490,550409194,233417704,802956662,208904904,278556669,573486795,298842501,584408044,352883233,204148832,799566748,778154700,607912919,238784835,130890614,436307509,841934572,254528656,117764514,949922320,644631777,482162034,891370932,612735856,780993623,250127880,885054841,566036209,960111259,717718221,119656689,175932659,257334863,845531207,14722709,959913751,890090243,980264084,913030779,207235812,774008951,835052012,168911342,881976136,939645690,209169497,610543094,113236897,661462250,730973203,726683818,569760273,760128221,484039636,90918987,797977214,141195180,316382156,845336571,34527934,810813707,794298518,416904795,506552263,268383304,329794952,175040129,393526023,211084825,198868529,586049046,311650382,391145757,428858688,151674014,686232302,113933313,188693656,176552019,681126026,820352250,891883277,89218555,86573791,524349077,706340167,718048826,900565988,558829772,53382028,716789237,574029929,304200960,893266041,587944268,826005436,286791600,317369059,429295994,498242523,789984938,131469738,872679144,662160989,808508975,986435616,967014504,225792597,888770164,517224842,505199385,778149739,40333382,422300158,434011437,563566483,798733762,139686535,923904669,697926955,767588194,369766505,295882550,284514502,240858393,975502257,457723861,48371443,304664585,734841407,745636425,916366323,513516207,334990862,794485737,731998328,609376600,788632429,727558784,761298786,517043276,247615842,219706295,812338346,90717311,118145573,213754829,527291447,445522117,955770067,178290228,347030429,728771758,20800762,745864572,300801900,926485810,453418144,372987060,893663662,224462084,938013238,925854330,409877527,708987895,722639287,581767777,610545977,160276605,108304327,285957918,348555329,33548091,64319541,669052899,679417354,240639552,966838123,724732095,261220456,723410694,167169766,898723798,560217220,292620989,232828835,245447218,529103112,899960629,847755655,597768068,390976925,636716214,535750898,3195559,637332666,944646923,853574142,926719920,904328978,431666537,533126458,656858205,163000632,36639506,171060008,226352534,451855715,137968200,280029710,54346508,994257505,737349568,52041623,755728169,857137504,132262362,406229715,34031300,781887711,793951557,7464175,186982077,379183529,729142437,595836460,121270989,485646663,514207172,777480286,590305673,501500542,659227719,495801293,579392416,507975146,251254796,122646250,572682990,742286474,27277196,901299691,938147569,815041305,50610742,211368582,620227886,289210153,759989560,533576593,108837194,743583704,579186248,353517866,226317000,9935867,399631236,672049320,361296550,702250408,97113693,127067810,684212093,364749100,699572317,638657644,960754557,558492595,339157070,998216401,949828772,910581769,194030777,628522873,298305023,562635418,74655309,93031705,592519107,454061360,874028632,990824961,55163437,383889217,760252957,594487419,399552317,489527030,302166957,458451289,524417086,741913297,859301872,193258977,969478660,936962448,350320726,150241200,823820736,477733980,901431771,477458325,411143825,868705694,914201501,836888241,616148875,153617812,197103710,633309417,557776861,37948692,744531616,521318159,664058387,41842451,930385858,651046254,827297677,117346359,183310306,512569553,890543966,519454428,384726284,6325864,105218820,4430736,195528489,555152523,369740492,584451915,882669919,418500588,73022195,261375265,72595031,12100083,636334341,866914310,67408161,434700281,846304209,720535536,86350726,628864852,591274613,416693863,940847562,671738923,598534657,951876015,942079295,661096844,492754373,573424285,547713442,460595343,673585496,224577963,270769821,990591758,708625649,67956699,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9762,377209031,787442074,91838843,142108714,953276891,41316761,791794993,289728481,255897548,289772259,238478809,970508390,982908608,518937412,386360111,730999708,883282524,445992902,871646603,273057058,862959806,517895940,128900420,520293420,874574595,780702159,445234569,166334374,412703091,662816647,223307687,785669391,6335152,292345433,653091538,381800181,175722276,849602770,454887330,87411468,928547039,847508496,606482651,530797435,336003860,454077080,987051674,397707194,826387224,706601687,472290640,381107134,706491222,780366904,879483856,822097506,726613475,124631573,805194949,431767661,470765963,986986367,806119182,523798003,806869607,832091223,500243589,220755700,894679811,459351385,438443585,244570612,325201172,230050680,602302429,17269402,406956520,223396614,406114663,975642114,189516380,28587393,684517466,964189613,952086798,460928503,845043889,984216748,843596918,975158251,970547140,329031821,573182142,645356438,760031231,958661461,706765694,604634988,989985300,780396688,963268526,732447298,539913221,245279385,252493912,866070420,652122773,276149421,578691730,613916691,558937406,393082428,472724232,530405870,485380989,617778735,792493657,673408214,103656182,151223003,61756973,403190490,531542411,388649132,62293310,907563603,702917106,485328924,335828365,180968287,445272352,180733897,585878633,256385823,594198533,802061541,835730338,624041029,31004888,273411527,8105306,733224406,419250182,529837021,779171840,971191139,369617511,271770296,753001150,701846526,992520695,514369924,819506440,182619310,415430024,492895484,562338470,123719215,160161561,421006495,33605112,929157149,485212483,442024632,560658152,822534959,522930221,368694294,565793167,866088602,365920584,605604553,229695554,516838163,214640689,662458842,395413555,32120999,581672688,666341083,245135224,980816761,954065621,112766859,282160980,870681822,723493157,863696596,136174806,891936767,549390037,157831071,658161619,3739433,68325431,246282136,955153170,133118056,496474954,930333494,581225639,884754340,435845054,925964038,304455824,769027277,873470943,400259504,38942391,21183050,917725488,572815034,773728401,665302329,115659143,403836789,764156882,614146815,101921304,726531478,118542204,304335823,200975372,959613492,147145182,555436380,3088748,561288747,219680811,321107086,727743226,822347292,506251278,591631674,982463860,395835144,202051085,354614571,421772821,436206096,81985598,493719,194639272,276632531,332299828,116214688,11166994,281371872,496568085,101219112,729095433,388538150,137710862,16019376,875438528,997384928,647681541,267964149,322912591,235250474,602474950,524872766,628935309,200754343,46311680,471055831,108775454,752007335,849396665,539565829,668921087,507080826,58456976,535566955,839193454,696448390,554069698,516279387,835548986,421444097,749294364,290348828,567301190,8327602,279926256,548059546,580004727,264593214,531147575,341490820,857799365,801272137,608927101,841454213,435916170,209483464,167626918,578840602,81011437,843674580,467947867,644294963,669171136,240767395,810086604,205133551,362323344,430827935,255879720,240774947,557124491,908882854,402071197,958620786,249807973,548982961,145899052,998163558,551326906,815422808,871861274,112322889,915872021,461942149,869642650,929609820,853284665,744020742,803225956,487815694,262295654,637695702,753250215,209163738,905153616,492024154,217446976,538834756,598140862,714619403,763678791,51625182,566259284,681554289,712446308,320093835,112993993,781778005,764346516,96109527,935907658,359058911,704243520,172989145,984459824,658339364,653571190,344011408,714641922,439248018,886083740,384175743,442853694,898014636,279590297,153648735,54016394,338195900,184758183,78454952,414275405,860359264,21878508,431337540,208218402,215652796,610477582,510871725,95488878,122559522,481480108,348722446,25435795,157265592,154132775,347963061,771391057,644999722,59151156,244648075,117560716,693111982,700681000,530434240,905011785,13668103,546598539,32887700,686031648,886943657,449055868,27860196,921025799,460410203,132910806,435998146,162946623,612282513,204065568,796534038,119123244,350654722,486681907,895243019,788854953,683151394,779207953,950056811,890648133,894848327,644053719,779707547,241753272,644564626,347294262,474432026,648231534,368375539,729429322,202422088,71862410,997960338,156327617,890822436,255027598,499016181,632778408,106406677,21760996,532443027,117747079,168196721,181463768,717856201,538181149,202794664,433882150,990282079,367367653,467037549,225151149,49014208,121607158,611163642,879035454,372082396,732929101,805757557,224557838,6031276,691825758,460503824,821519295,406744939,858217898,353275849,508481283,64692831,752007640,764868903,899014898,76482773,492299531,848937724,95382737,779188859,547944145,676460800,858665421,915051232,547663970,519424734,753521013,707402382,326469721,325008320,797244043,80514462,522775768,701829067,666202008,487089620,101983527,215267296,2342549,346636873,316135841,524354261,429304490,453817965,439792736,394504636,713294440,42411363,673819255,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96,103441792,994763313,107315497,957768675,784988752,786884720,476566031,885585500,192741357,871443169,15751641,373023413,929600901,354243335,670896880,68726510,641909863,748819309,831566385,491640020,278914469,386772067,813495558,518133713,519819134,318946293,758190186,119338898,119023207,133671784,432875329,197923371,291508800,930665927,136889494,638347284,696321441,895146519,736215278,616201637,829000429,945565145,107458360,904232335,348671190,520404997,410516622,433652774,598915323,655981082,36229817,382260403,310978338,569586342,327093356,580968682,605631638,341828310,89268661,666073374,957996970,583866085,875548430,696455382,126499752,682874881,876754401,108386540,342284513,941381161,523587854,686576258,497947786,399306383,523944449,317964800,243865653,30953539,647054321,84193011,17071905,958341961,347202546,563627645,312161743,235418895,299129495,18315704,254694448,916637005,11007707,799485963,351567703,715386476,265622980,365812691,572673303,5556797,443059469,37115316,517838593,311697764,9491101,593515781,425431430,977885375,24562642,607333162,553645356,560479954,619243181,161493713,396307893,692133209,631180903,903204810,781772766,608878824,160368137,642759272,228966550,918984224,515940883,745263140,791521238,660362857,872835195,466124636,934151040,502801203,44429687,221771747,39599831,295904204,85309181,901216914,425580889,687756857,737818459,508798108,940079184,183210954,619276674,908688293,943271142,360879637,125709282,766818519,328538065,340519703,845914589,676791553,334390681,758662736,107913308,679278643,253465196,283843395,114477021,645490486,389821696,24132885,56594509,754017042,172069740,645705402,750691253,527830936,436358793,244558663,314377473,548943679,427550460,631269168,839791414,426046278,791956331,640835620,545087872,951465042,388519487,177339757,40830362,781626340,956443032,350337560,481671726,500552134,833972565,363728701,318081006,672354077,443322445,720241633,906539978,646345715,807435179,952080056,538856607,648133979,280996044,173418852,239152403,850153454,139243842,793666767,799027635,812274959,420157197,326502611,796892439,120210730,890567668,219009654,242602276,781057778,493232855,57297261,568755461,512656080,979011144,844549659,503913537,414523170,210757779,856375338,343973966,467131285,224189205,867470594,900107471,618845982,116852701,483235438,496474384,366216387,556155624,847287966,214946699,960795595,91499243,433520641,242729296,256183329,320291943,80173527,24541468,875986945,947408604,913246716,449091436,246276931,772322039,149726490,800998831,495593515,495035212,695703963,119642938,487315308,518942980,110740881,40205169,398985650,145629567,926792443,917528178,415134896,430783897,325172748,649653334,638945117,194420259,294683998,252409824,10004166,233087607,536612950,25494950,805485319,366234717,560142430,397897645,225957129,531541805,30161875,155733889,279538229,52229192,950083336,692515182,391020669,318614884,624867935,119617647,551799828,142633333,643120444,897389115,248855753,76990167,187612340,803399860,474322701,857565105,17528434,212452697,323314238,871347387,93433717,291495318,57898927,106055853,995470122,937998174,440768148,381100388,495656961,350736846,952924728,423212063,467317065,102478575,666212238,949984860,479197112,81823157,440027745,159543837,977287898,858976209,484295229,747786169,765481697,969123250,925753609,65698603,489116840,125442674,198037491,793953009,414596081,301258017,697957396,978061738,167136168,406393313,643522841,490717978,89950417,833171534,783907067,313134927,206235195,88117071,613801132,81565344,117449954,866712599,992114330,481815735,788609055,477842810,22442930,766035584,285616071,533627501,174008860,221504704,691178826,10653706,685861135,603947083,252449424,514025442,867099236,105443417,449672279,249226564,91893143,220182064,102965055,184732561,736376610,306621083,592506849,426877711,77426762,200338439,380683797,701762817,538829059,731728781,306689494,278244188,80166682,792998040,922796687,743076753,54079311,666854425,956271453,955867209,140115399,650738476,298843983,392472745,270484880,880176110,89796000,653178483,845258999,172730292,373539306,635286024,345961512,305972985,393735754,28802254,825410723,627682515,759919490,200653177,997894046,302394294,654739692,809177497,54131049,352698501,898264695,285219012,681224058,880511640,890656449,128230137,114848229,672635394,87048344,177756968,947247640,843881699,818924206,471149591,27277026,201090787,964770773,791821411,645661972,379430468,488341364,119259073,468341422,529890438,379551985,928717554,247987794,621034489,722095846,417424583,712966230,388596346,998787641,546399002,274504676,602793599,314658598,216035937,728951014,601436120,914489887,111729661,546669718,509864630,308946747,629944271,351462961,405749929,90047103,756222829,405312570,478747667,23045612,846381266,559146272,738226327,571084703,396870402,380064851,251770774,74419995,738446873,814575536,251132934,131172804,671503155,107851894,581925950,974735349,881554472,838040709,614652254,331853577,490596822,205350878,878148430,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8878,369596628,310436535,354588259,574383987,850364612,426464918,712477829,317413211,944774607,434463560,657626887,352554439,881227481,413459375,173174361,118011398,264089396,654643248,91782500,659050551,266705244,520464794,170878121,302300775,435944664,746641193,347744856,912706932,191338361,245316230,982008310,828567229,432859101,968865,773805834,724170314,356034401,439560892,60550524,239735545,48839191,950417594,202017807,560957114,35158732,272650996,8318235,986614281,965259464,384217345,889662870,422647599,699056323,293740369,675051304,727323614,199022395,252202935,763231725,836238539,63967854,982961306,967450296,155901551,212775456,76946226,215086519,906427429,11755109,359531994,579170681,177097245,391877442,481271568,456560064,573664397,540994013,111977451,658229193,799463100,516712072,984591052,481661811,576881688,322623795,828256225,103000751,996135789,432013809,19372772,863427854,519248593,848819208,122293876,582426935,184780877,411210301,434283973,631185565,302060531,962301799,112115043,623304360,625041187,882929270,498947533,708516569,450265260,57124894,893597274,527185107,401490218,427380268,938253488,945364099,785815096,112267910,677293410,770007861,833137948,475188115,138135598,298160105,502061848,190134244,924699663,86536994,186759446,941350138,127298190,821483712,839089893,740717562,654057481,470728079,839384165,917256172,689466305,676105885,992219676,723217185,545256338,846193012,858135211,419764207,48099614,233438174,920500019,254861709,661149510,155200075,426968729,566445957,477812793,365457627,20243699,905000895,530728966,170548434,807151875,622645014,743748222,519009822,244992286,657059418,48345009,408783000,269496153,818888415,658054180,818119982,213242219,920504671,274716241,195738842,300290772,357061911,314281575,488617883,800932768,288872939,703734491,876736893,963697112,372191335,191932492,692450689,420490952,499808998,558451295,818264945,564674281,260223894,440250609,194238496,209062061,994438676,560160407,155488796,604979204,441795378,484116902,477454687,244237894,40305952,73612634,12834715,524885847,984236894,188376661,80418889,475473146,258607429,424866259,993563712,67099500,447026929,245443173,716407750,804061354,377795089,997320116,145800116,861306579,326559135,729341656,988346783,356976353,419822025,895633197,128319490,315156424,832140461,590612251,728929085,997860996,155005625,222482068,386718975,597581648,695786366,276375181,820305648,585873976,52796444,546572977,73916396,877730330,891460075,366898634,471280538,807534740,9620572,490183921,220108406,632044833,182399344,949856858,169650387,59893796,709462069,460548191,281049132,839058604,280645972,41221458,556656542,221902589,203113577,767804629,341046818,606145160,125804448,657776265,767634862,857746814,1622939,210524964,971490668,369262572,267571646,311349305,525041595,557738645,940735233,531235616,535761589,289481932,392184686,236568829,545307986,663017369,796606620,205375055,152705135,591557746,42519368,715892837,516211172,257965893,486782392,51115185,518210610,110352688,824655935,796942879,923082036,725759103,62451534,858174518,234684958,154181177,342196851,56377716,876604217,893589870,727140025,742615945,4097788,60912166,441836774,363124157,89277248,919728695,622809560,357322284,660908393,154120555,561157721,953250321,17449205,317892390,739344942,976065939,457383199,22175000,628665604,407661247,337424789,294398937,617560465,222927955,115026708,531284446,868067197,786196987,520497360,307580996,888327381,279956623,71428334,250244947,542062397,767085048,7567042,529574256,413650589,287686487,500817065,423146289,242536247,102843797,968168971,828220204,89279278,199223537,406954288,522747288,427002269,993272465,475419084,776736422,282610397,948351955,449608132,113759883,424344176,571847120,712895093,306900780,334335849,208351340,974785592,780053853,818975876,126071027,110813454,326416697,348116295,917600718,19798049,939654078,100998239,858008628,849584853,981681658,94863795,450299898,536135371,203451665,580430002,214429692,431230428,451547387,866758867,335324517,911488654,639282175,450637061,212214429,334467544,616125681,408855155,756090259,216677108,733969257,483759297,155132173,983176406,413489118,139955042,835284816,94307778,51601132,930717460,618879104,347188632,957128688,860288911,991363138,769679222,263442756,251265711,759628048,719706917,938476171,712479998,654652279,829848248,852964537,868001910,246777420,380342939,579215255,273086839,705983400,701175469,582621275,293259373,818392348,404696338,717607375,166143772,276848576,716533088,335475962,436348323,206226333,410890475,59258899,434694308,706167939,967450246,772984848,799641294,956953062,709885614,130616287,787717749,72246181,181202053,987919339,513192264,83401278,603275482,819870251,696067556,945296754,176857251,146217084,505081678,957061826,843160373,178975587,239566054,827174530,961244276,928267676,536954134,38898870,901318308,823568375,208393983,480489025,117873133,330700173,540918528,690829389,335164115,516656290,66632180,831900676,307396233,394405222,173223553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57388,802113238,20888547,441157763,930352887,119590920,107025494,886611033,311580997,245645725,831225261,584909554,380164425,627462335,82832696,448403376,34137274,655985082,63020032,708084798,901604793,999281826,428876207,1195107,156804676,765281539,458255422,858726059,708102146,772128670,722563196,756528031,426254178,493857311,151752880,207732294,166331497,113123693,144394810,269941633,366099888,453639704,959560497,618832500,597569768,95931210,572093209,817649254,167211277,631003148,575053464,575402243,209952981,991526954,600950388,390582214,667994557,311812887,367968684,609584034,578966842,961776799,339502577,820220834,208261923,689616965,952182884,733044827,360252516,294806667,918791290,325467225,265870015,543581237,729804002,144938539,454614909,36493558,978706744,735666408,844452767,605581949,177286358,965096680,48231237,395635269,668567476,523849577,125415564,425221149,662849237,223393541,648241201,164020805,640201245,499189133,790730128,68030214,200449506,189855247,500487071,255293955,334548041,496631983,612417010,148929832,934547709,267836140,973989419,751028124,951646581,30493028,588617409,787600181,414107861,321833353,848876535,417244616,339868429,333807135,214282793,464743398,236509327,464585784,5946504,18055851,114226265,347947009,503976485,501860376,238723291,973573516,927945838,267528972,644806533,557125538,557896654,264946799,104571127,173776132,20804792,754401112,894528871,174600524,462501191,378263446,153318999,321220342,990191634,853822887,367186446,673840190,140343347,633930199,523732086,930663973,716021491,767812072,762967933,625103686,671966868,462422983,502956590,59580869,835631955,241720803,413402147,507366798,800728170,335645061,889620173,124333381,306118856,699790237,808136844,929283049,796194099,265693429,296813622,641218597,991655317,813948867,5412734,546748532,76423220,24204055,724763432,298772792,792794569,266277578,672627065,274974033,467343743,781901760,384562706,186521114,471750181,845070877,82211505,108021322,815064999,410896230,589330362,171632017,858798890,84418238,673914181,55625945,364127716,411412527,131752381,634742782,827074054,136901182,447979330,645125799,691591644,433275502,116606118,928607431,636338985,599456702,794995026,877997019,703683975,448704455,25171194,848507383,668605197,359387077,934484293,500551057,20971594,598282332,898478367,732586784,207795202,473843745,717177288,238009834,335137945,109810219,937190300,247671450,894164776,282638388,754482687,107763335,114925607,187345106,588475017,656044226,446145606,161883470,900217835,409866333,73995971,858236738,613146165,37084165,897744618,901731954,781194255,813485825,552287700,264087167,826937156,700860566,405131586,535476600,797144922,501585261,459021468,955578930,189001451,38476212,729825404,744101026,565130784,436852140,965886667,775913164,688521867,335752595,193113389,878895970,697560466,258092717,964398324,892684012,567028337,870996484,205906046,44299235,128335195,525259527,876896519,396625534,544735952,728632744,833405785,235990035,133965901,727165012,508818718,94157572,813762534,119567823,387669118,890276819,260181244,168256224,349324704,982031956,41131179,688005699,988121629,701517184,447649288,403210820,606170410,997047486,986268452,988681367,151524613,669306385,557632637,977144068,424620839,380057489,563218420,403800413,481914335,27645274,514446453,265851085,238803742,927627704,28198414,543874363,288114362,63713421,580519726,364189306,314384692,795991334,542583112,940936820,932646960,620737892,644158395,1439279,976739358,403338255,479556327,885304354,99574822,468124113,705765614,211030718,985054858,236508984,903308215,624618200,616009383,934059335,661141035,298564563,13090710,295161360,667483924,656672153,751531245,408592065,786531766,994487527,588573431,659947165,609128088,450842519,534914085,331236199,467600342,983893334,940947307,798013407,169881486,786236651,999525478,748741556,108008887,873722205,61673185,519618659,258207345,264788625,304256795,301654206,614245157,608748980,42461237,973692917,709821217,268466098,109344186,572859231,194581865,666656676,276699057,256396082,284112643,83715664,750879193,336751011,602946751,408956883,192320562,170306251,875742187,606237731,639531225,836598762,287380678,978516197,102833124,821192648,508206941,295684890,751083738,770985290,624668683,585490535,415792835,490965618,461070210,608212458,784764902,546091280,580116754,370266784,208027529,240475014,332805672,345846769,559737041,890316752,166292092,27400283,446913767,814816917,17905173,350007504,650261964,848007770,858001849,72755168,308291672,485996514,75585730,350531163,904290535,312550840,688917040,382636408,391119409,518167992,261437242,273086921,554868020,689211288,589891430,767444776,329051679,708070391,826534019,433901383,544071749,440317140,242355315,303252835,638018446,304981734,752530906,244959880,437198224,653838793,90601390,95113168,870196645,639303831,50519396,102741120,609370721,74307643,431138882,170970161,291600338,775192859,174817113,761816557,407387785,674349242,409316587,585789517,719999935,211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38,185541382,757602860,565152333,809537352,449972617,161032024,577743370,949401450,117512732,287543553,43124058,227284466,590673420,404715004,19453154,925177523,463298988,148397444,597949494,712869689,822662494,131693036,438285071,989222052,629646899,328329740,598110260,326786209,375329589,479793273,365675081,558250353,489853095,856649519,463776386,703016577,328235294,673050151,726220479,537325776,971999977,703828043,698747667,984066365,389797330,737922518,924808118,113411533,485373645,36038690,939058157,104268837,31328443,301659266,875151944,760222481,956071411,976993938,307696037,601056196,129404691,175055648,360787327,717250854,565848066,445360257,24861271,713394302,844089700,628209976,330417280,508933648,506072430,389515066,353074408,266727355,565349190,854444372,893934914,391347606,5195429,497213484,951654888,233660956,171247209,426480982,802809466,869586439,886297408,954553456,502457697,966087589,514810125,691852699,257332167,265769681,248066304,932379736,147943198,148596632,620737224,108509559,466475157,369040429,662295941,136591003,165314657,50375852,44447581,85159799,384128010,332828216,680590817,833740789,989163507,262266112,559696764,29250964,485895264,647421454,470539934,919174079,255573189,4248552,815689501,190399774,540128694,451706432,957222717,269933280,493798404,278728070,576194454,130409739,451440434,833358238,106716910,98812708,329873025,143652638,237965947,186876749,726188837,420835200,68310794,789936493,541061928,993837410,318441447,732916446,481411587,337643760,702667470,910812908,659323934,182590913,168601935,47431345,522779505,269542562,442073801,292869676,776358108,572126534,471360006,25209465,626134006,787120487,953959369,130852822,874445089,585935906,544961406,18963575,543203541,738015658,436976825,118582870,459999690,296763957,968124289,885417393,449914969,337591440,80511905,498670329,637774051,110141359,264967717,747376805,274778998,474847441,471607193,578878305,140590577,343168350,698604735,785482044,765110220,167231711,543010936,649080176,738250291,754807917,819964941,557104070,177713309,11361833,332173313,151197289,79617567,527586474,942152754,217959743,449083879,796868228,983764589,413279404,269236578,936534183,72146186,768443164,309567653,915225909,547868253,911830583,170245006,541770818,146490144,79002729,777893950,880578516,535251305,269379691,323491893,710717101,520696385,34017560,492081093,716334422,210428366,617280654,459874030,642884322,409604566,693402851,148532653,948297722,286664694,774475595,191744460,289317426,604455177,836182488,145647758,959872548,540318809,822935418,146369762,650079747,174287235,87631824,505319854,86413603,592605387,613228856,696252382,134286435,662179015,912230877,728178303,145105549,885498009,994322385,797989115,672618652,415123101,847999031,893899698,777785727,236126618,373991515,535519283,180865834,288468745,30131194,416116699,711027821,336326628,619363077,712420056,384098695,12485545,26232287,529953247,384265503,43357285,48724057,190719032,966634635,475681975,772352998,589008264,612743089,134439090,289189854,679054473,994477164,169926833,241157610,923159586,751741548,987253522,928511645,991656178,65545069,50740556,806107401,47367882,79967003,647306948,955605627,935712556,991900377,164744177,748595155,347995749,689078661,405115194,839277276,726684507,823833784,222882642,964450616,488921422,873651547,373137292,164791109,485429788,255089007,250868116,860280957,374784324,751350017,791213540,52005707,731112751,993204153,279115024,949698282,481531026,214801233,874462600,830534581,620901371,604963497,973241664,972129993,87847827,253469270,588764579,788700858,900314031,280958613,153328310,225280296,185581838,399307516,951511789,875281146,923136971,296930402,133266767,973075377,107266668,2207733,918438563,567173938,894969611,882471720,310729344,613130001,289281245,356451246,574764844,37464885,685550268,617733425,962500788,614083089,305046449,844522499,316847571,448550476,139963992,312760472,349812532,903149,705715890,152876717,857393783,164485382,273419329,589386932,962573368,273356042,381214466,487186662,815716151,699073318,239322538,70861479,497731960,316082757,453178219,625676032,264793744,271416176,10456284,878940345,95323328,676020763,151542162,42147298,215924120,65091228,189341582,251548471,786104646,671713972,66120308,737606032,726679738,790576303,217167888,264198959,177285778,814139156,414658945,457277264,448907194,913012908,404164498,622307422,342957579,766393212,388528612,279491666,541791071,734402223,801781751,602981001,540659168,693826094,945287546,428514578,194393903,230919093,513799085,389071840,908626810,486666596,84504639,687723799,85583814,204844117,625243231,725451154,454160303,556124244,575921095,339315431,233060608,175952607,923706773,209685304,392572538,893735928,443554138,242910421,524957517,607475263,357865610,402443337,169842294,841499830,916979145,344237229,561288259,184118922,39556716,876973035,365387618,262103616,591316563,40772638,84023629,20417161,728615012,195928817,817295052,462520200,667311094,786593337,820512044,77289917,879422179,139382403,107698079,637275275,964076556,964757813,867730629,561409258,823654883,341669019,130899055,445652452,610273720,261833927,949105879,661082727,7269762,200790468,917875065,662653049,446837695,278905503,365053979,557020885,24983939,922080477,207004280,412134681,282190739,66723778,138699182,644199244,683014680,419058927,340285149,581858743,666261934,566104823,673840055,147285845,126892059,790152314,63596334,557470795,491041421,951548372,188833397,775616819,140832513,313088557,862970851,524698442,73995692,972405527,937607845,233749327,598095471,701050006,837866748,189434950,231870384,448384623,715682086,231967438,669566109,590745271,350912842,995637470,312049191,78268979,389484418,543504766,635544200,607685509,489185857,919131299,602275880,904090226,849403545,11964921,847797243,965730262,990541572,821996219,981141646,869389652,237796347,225884128,933701062,867834705,103316675,99631091,961661181,742021834,507666748,297064690,911275872,759910796,238847733,296584530,778864502,178661054,591238848,608958180,73294803,526574310,484410394,630421732,754030210,293104384,819152129,108957402,517310856,16902216,771040953,878205403,521655211,473028331,955563691,632277053,310603621,200963108,714902076,952367000,439271832,332299240,265953416,273335237,425267418,164215130,234579065,546123471,190285026,81044820,944524699,396695136,842000542,399666216,598702815,481581996,445421266,73031577,823863617,102015258,57057570,755228807,728985453,906047511,987373303,528002744,940738098,624136623,676618466,226368925,17627888,79192923,415965399,894347475,505427862,288519216,125930993,702595471,421198934,927653982,963594190,866289153,243042410,301706364,470107129,272110132,86126866,681739361,175346595,54857898,646734861,184148988,220842447,592274780,461874386,736314239,307927452,883110483,647563406,809885697,361604249,850700834,349858256,890752256,543215797,688155474,34212511,816694920,896815592,828544267,852611456,13756293,640171643,738640459,306501404,79803694,220378265,55965837,154394616,713511160,479746893,890815894,594009291,426138429,705703540,879042586,868710017,62693544,870213955,54432065,638155419,744666871,336158811,60164828,322719713,743562534,746207109,35837461,961169269,167967360,3107007,39381691,360818765,978808656,525923049,915945237,177592973,179257736,918631112,409663750,9739526,699631181,611489542,713700077,688629744,466228496,912167021,928385897,104023311,461068732,812310361,547630018,515064637,618224447,558849564,920892968,875785878,920402470,450150754,418774235,76340861,815349308,151528031,896151926,313011969,104465571,615320108,790043892,182070331,583841107,309203484,104313908,929157243,85509336,32133775,362803,770158802,636508792,84545797,647503427,405663180,273358086,41870270,669244601,678757852,328852535,381940503,519827848,356354545,737318864,528292394,332942469,791403046,680699631,370392809,712624298,523435325,868958941,439581750,151200827,473817331,178370140,261712583,338296429,130278184,994301216,583001192,420828824,605995495,42298997,403209461,627717885,989953730,17305715,367842101,48187573,739342264,557657234,588989986,115605572,95015491,838997212,249227258,750041491,727314574,57511361,413045352,998892388,575888577,405892,447974454,339658299,386343835,551766604,577887245,961692360,653023683,770584231,20793815,574548814,889128031,559146603,922625406,453317484,188953849,533891343,753367858,229193071,859178615,8687439,244853534,302550668,919544324,977249876,845456378,294735826,35992819,23068860,168023575,733556839,20309076,48728789,488155996,415728902,673287446,570373734,198936240,953438272,74382465,922967344,758702362,811189067,423821746,433623330,265439811,887451132,118544968,466731203,247651447,984261359,905787478,355237667,721172218,456263954,473076111,129358155,320742832,79661141,762797005,396534625,136815526,513414546,793241094,465303346,985938908,820599090,248191588,760773726,418401152,55625550,801916802,111989508,141625358,524695880,267810759,740223540,753545117,66905747,610259364,855293703,130912304,724425773,147576643,92704787,266890955,129817375,809042497,181073983,310280915,123548703,862361973,741873599,998622352,65613929,916658829,703156111,799061689,125606261,931473378,213673024,364855920,347297517,446235142,303383563,118451395,846954282,837794988,683898235,782340746,496908826,619094925,649026821,512041100,301108408,674943677,117967409,880684013,523918113,895271045,16249714,34806944,583421339,495622833,469193274,597699657,187886195,394432736,614856900,824804447,851299446,488475718,536729573,618216322,490285118,945095278,978690333,594021404,486151304,33007012,32258597,599916345,78297903,746862396,133050460,992312191,711632050,379316958,124952371,56528538,297550251,57111191,275352883,710809794,293043158,204494010,323426056,880872740,919509107,260284913,593003225,233816509,637390434,799805516,978171174,568652325,570171559,982884377,207691801,391037419,973527462,546080998,721298046,159983643,344600916,685792009,684854751,423585056,162675916,435005012,935672920,418257588,489466278,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,663368447,943093901,88238008,958461876,302045409,23099225,45429380,897479208,449894743,950425627,572589853,350006912,448195347,296331903,959498502,919237473,305636087,656749154,200818056,169533922,46998778,764499255,321824032,441662218,657108092,987528606,217968872,86947432,325145738,523777535,54807403,592130219,331744668,902222765,650585490,466942100,961880137,507076518,354981356,847537560,213377275,931412320,320298954,83557154,280323259,676403015,800043487,779514714,408551061,420482054,34222506,888770008,840004784,679095420,452400156,695723645,690500281,514645570,811797614,879732454,869015649,869860367,547112980,208298191,79668027,76494946,980815440,425977703,671298148,644628153,557910606,480194165,956651813,695343755,756030046,516870033,305889118,562005518,41967575,232114414,774776658,707385091,470668185,603892606,698622864,756560668,400080603,679378697,676938971,219226058,686326726,298975875,661922519,88727589,475294966,236548906,210613149,563710769,185919053,402030905,660152596,220417164,931255645,77937803,858124032,114977189,243067545,296175503,572922853,421623552,360159547,271176298,321964128,601108869,25669957,729970606,346034467,409064900,340947639,456307496,816546402,361769472,758590330,878925031,588974579,903808352,979739219,105231895,132965325,577647242,612230849,939837925,711089793,308738149,131621001,543209199,985184586,32727009,266703083,825588682,1126420,586923898,987852164,598531906,403192922,449664632,15855824,304456999,932220974,797941608,409229570,518421904,654794710,184061887,281406311,289737607,433917712,300043453,644982714,196832557,132350969,956972410,221181250,450770397,794728225,853582462,169916186,932051519,505054962,280637090,948021915,395415400,821395198,340374668,99866813,360484505,381741502,606104460,17134172,917435129,668599397,414546210,850439157,649353019,791351204,431784892,460065137,248115447,860086845,929348570,430158303,361513232,251298848,932140163,688974240,895697727,909729162,890343448,528130666,667997636,368296856,552602478,757261644,474087190,76409325,496499288,717876609,63204164,808606478,708806434,737997436,869643582,653433081,831462977,408714047,233317002,939965268,581221007,280958558,855916275,85615370,297453775,715569873,262895691,22230291,999759503,655525946,217647431,842864012,533970888,485676921,310102827,261561951,209139835,585624226,675629870,1617806,945056566,499886694,435796229,285596644,193125515,487857185,635196849,713202213,890720564,184545679,407363879,337156821,167822922,336643773,175785360,287640115,113820080,552526498,902588943,951182522,733836963,999036521,973173197,991454650,52413028,120150070,382506731,584289701,94338915,484161406,280605330,152390775,333465657,564233400,343390184,808158652,752642966,459961368,214236269,554210800,230932633,714245716,894487656,64224385,354908965,61663357,294886381,263769391,494141933,642275696,253782082,323432845,375752856,165590683,897564129,802638225,412656852,600275009,514403370,113168134,397597213,925413300,462508833,257473674,235560208,931743362,964472330,144042980,930402839,708175663,831628714,499118997,514331290,189105497,49881200,210756637,698373255,126057298,321671752,617164728,82943308,564928006,805157540,247803843,146937070,255067997,337759060,57671670,847541797,903073204,913416142,514622228,733509826,697856242,973493113,646645492,380364836,181546227,279051921,886003884,775944671,410935081,214932044,222100559,511995732,763860653,320877110,561339666,850578557,625763167,287494094,576502165,144580388,377251933,568726715,271544743,269302953,481627390,749371708,238670719,882867405,412689477,325535781,995961368,34519232,900769216,397595516,380815743,421184645,309583739,877558794,124814557,190265373,608006853,308011930,395178179,724369786,440078427,81137092,848235489,266532216,956381826,712173924,451131298,964422928,967689204,649190359,465085532,604008370,958819767,278967116,948775053,443273318,843812224,224078697,998266764,598198080,681075905,364270165,856194465,425204984,504561106,897980899,124281205,14944768,759613565,786466154,205525425,31673836,635331233,735042710,329287786,846474543,112551470,691580417,877797188,66498764,273222157,83534359,140067476,881039526,939327536,435855758,981438555,300913472,105463074,359336316,797248776,208883291,33250622,257084823,141250444,926900251,73895314,321873002,349284946,714344759,312268001,671142079,204328113,487614016,227060562,732881082,472810969,346761432,863878823,899528425,627684812,687753412,576243486,851347596,68283828,169355626,530260328,482577880,560734544,468532622,311348200,257984884,712581146,654031226,602168922,43702466,709963647,980362641,945290784,643566288,421628611,538468536,822776973,90123675,564965366,186006435,736833439,744282345,18214981,961962880,428241418,243729081,518072977,129775519,967849336,351611299,640651884,933524718,467688757,548915615,786087614,773842288,873357218,385069351,656617887,149229693,411831641,982538124,554387391,271943950,443393842,120915205,97274835,942445705,716244982,826978860,435107993,141454811,261470601,997841971,21939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119,610763684,952665378,782904877,644064975,20952137,882140868,742908006,421073733,419249948,770792299,815726015,860291543,810056821,74234507,313720822,927962742,594059363,79883946,581936136,337407190,645726972,389892835,421897537,66257259,544937065,698823525,994080960,357369189,503821447,238251340,421579202,113965533,130829946,412003957,861465384,496368224,478179103,468598473,805675482,359676852,40854055,315518351,82848608,208229205,226802387,975426381,936996107,344603746,79116970,139843499,177302259,918963831,107258101,487702881,291821886,255559395,17815751,83311552,283912591,25556161,826051096,721575830,376374300,496291245,456521190,286730334,68415249,760076808,992310388,575657736,245367591,338846040,11540690,889245788,56199289,55810736,668228510,151138857,723366245,188541227,392780629,647783872,640095845,612961164,812189490,998614528,164577689,626272167,194327022,764181868,812468529,702933922,561231462,993292076,99919404,879068385,866472595,477162993,653411871,113047616,357119258,220545982,355624678,561432606,749075577,903365026,900125427,339433681,539850001,754384206,951514618,367917565,170666320,980362507,238096475,281319323,464511063,205892231,374241945,665394908,943846445,715493545,14939698,550754415,123348421,777728286,147311405,655095910,465640567,498202465,858076073,484395890,114213897,392003762,540484209,67048739,684709901,846678322,741776035,879341295,677563145,242402599,782835211,826057618,753146115,790002567,107864370,880289547,76508549,666291963,531150529,301093655,806030718,176509848,897734499,274740179,330025732,211865901,366383969,624154700,713791930,861013000,582866594,606966639,209873610,12140747,980583908,562300148,343367935,956865931,754001177,473726346,165951985,741514084,384050286,606976907,491859623,867842743,770860995,295871593,288123228,501921412,736591495,271424398,141804197,829289814,773054590,280587030,248705975,725971716,192161810,806886026,639119363,391644429,254587406,813096660,260610221,171043536,378316029,702706976,24571224,120108312,118519379,282579379,361540679,23160386,582141233,514993215,37767921,873544569,317501632,545482737,769237946,93434763,954940349,98309402,148594968,95226050,290410764,301127529,589368241,931581914,499760784,571010516,368624862,639932233,23737244,582112961,672881213,79937228,415323121,177766748,580756094,443094983,817895971,792252053,149256333,462297288,214263386,120372477,708805431,99296329,83446370,707473285,782112851,343167023,880954381,606644183,258115785,316331450,481280233,250843215,645166384,968073968,987498563,10560094,740711864,159760039,740908287,779835434,426664367,225675135,910812142,761117952,492280401,687036899,820423968,440935773,243291114,939653541,667690743,822569054,511587746,395931971,865006966,881751438,202130894,757318988,180144560,544798332,1589317,800204253,25407671,317629119,542118716,253051618,472660851,444386488,844497131,522616064,683111071,424001948,919953290,782797380,580156970,339915402,85951473,616628043,597356855,965174776,345998381,747143415,807181661,46219042,76613272,341469696,407948355,347375812,536333662,717319774,645047443,205827407,759659779,445838996,838638289,370199673,9913547,220094277,578949230,106176366,26249147,668081163,110029078,254186675,288178038,396783927,119876507,87981257,441985329,629116677,570734529,491314298,1644114,849267841,65202199,395360318,671738321,371175026,486362907,457446895,332712774,698268510,854443754,589405319,258192212,411608025,228872256,677251176,525333089,962296084,569560603,710167047,607891480,36375795,318913245,530408465,143960468,210740189,539074093,210565863,661368330,129344503,938547147,18520573,208522226,462523016,614266821,478324583,293446031,148534596,705813258,212740663,582418699,405783491,664043643,598652966,98605995,112022792,720097720,941889438,256193164,971755050,60059589,582632398,228796368,66526757,156448409,868207727,202488519,867590126,786078619,858157622,236124647,286030340,776484748,76319352,713939182,314575877,422736811,200229528,417197827,996720625,866156711,862389391,864913157,909015446,427416847,602417037,845983753,276933587,916489716,690376487,169250501,210601729,164748059,894906932,372610741,830311262,951663585,469085575,906272067,185211194,317553547,772968319,886209179,75146083,583958131,671329464,104578420,317908441,560806309,267740298,572795269,697634988,534389830,679030869,171514258,944764468,10024674,145382133,809455213,761839170,466233044,905759380,704076366,994889596,375934081,7068867,158391426,389487109,233914194,856498039,879084638,156997082,162623209,672532614,209006426,768128502,809334843,86741922,100203508,472217607,776542485,516354550,391502135,342035291,437176452,938387984,685657777,448107843,167825201,904277666,531432871,744848963,463802343,590186108,401241139,581704132,289646734,614812579,656021590,723336425,789527269,376715326,228620902,599360552,526135740,10290995,597542041,461190460,994841483,124239981,669045135,748035904,607945029,53289918,147536564,261228986,321132204,547531145,418214286,413628883,775014647,320016222,352064581,62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574,581632043,720954817,905441347,674717020,47246110,157905775,523294742,352382713,848595698,776770442,418318747,446989563,203512436,960201263,189602958,542973207,115878413,946368074,166271798,597307773,388865497,471368755,885497325,395474220,984981480,518715396,573795732,559904505,971885067,736230548,274209983,587028342,1901137,925613721,517766825,983772006,586636987,66914927,774664707,530162500,280448413,698233646,98778454,108662901,321128579,937898416,688282288,667646289,87500564,26253884,192386944,952817973,577344822,658300845,523717557,396102884,928591113,676188647,318106024,721128813,150836626,495186160,471129683,655512567,845793223,774033295,204321298,694552357,628317140,466718503,912236862,136039262,849602105,652354884,25951376,457445973,582675737,375314300,152672305,41725505,542381423,647268715,637987208,165718259,203302931,939940142,806962729,721717873,184276674,220357253,465277813,802398899,329691768,834664763,909830955,119998942,50239410,994563077,230294742,882462510,134224533,244763022,690890292,681166374,586902759,923614797,828591041,759200354,563139716,270241357,592736439,194632297,593675662,253249995,487399235,223715222,27115195,64614290,816889657,757228445,238874392,740877052,981852071,566260689,836249681,943990708,780564830,605216844,570771513,551149230,139664041,691546045,877379328,489166060,860129509,311555431,880938857,483411154,301599514,357093684,899881097,263647810,90855362,14825347,565687213,744988245,588269340,585691689,400271651,610368647,174339431,788580640,993212378,257987245,829317854,440706798,60435731,44854414,405179827,927963378,454691684,806386425,960524408,529573081,960269965,230248298,427323713,490326896,641723266,382358603,171192331,960873238,445393331,787290174,414856484,950984219,434092802,514010867,85741505,202583989,466059999,411696224,903263888,223215560,895380624,972652145,116190612,6289016,318924793,665156751,921301813,553037731,490744068,931066923,572224101,995039946,517426256,611536595,823641051,469452999,921231589,961263189,220986240,648560647,909521149,38176084,368310920,501404468,201227774,108299755,999778893,513791455,656121202,869716923,278684846,845119887,51835334,847304531,786041451,615898101,167459957,367605387,744640816,961920857,653627103,190397057,727514154,233076240,410503231,235617899,498427495,701339141,699227522,180661028,558373410,194665698,61833473,543885503,111350578,503402133,141003,693402461,529125336,921459769,212443041,975282711,64899039,678907053,530611900,405299453,61369632,708868125,415490234,911061338,157030717,717206961,315022304,83313269,549277411,320206564,650175675,955262199,60694002,996831865,925176011,586961613,460325370,991329740,116860956,924794375,894681861,407587096,439487966,68795817,74703079,421092105,242106468,518896796,851443297,976046273,389984457,248906305,408491020,264076310,147127629,365405251,664117777,509439590,957231845,358341430,80693492,265700818,767509799,921315543,489013637,959064888,681040210,681985833,782733234,886926183,885548793,595283068,46451045,966407312,274380916,283727864,373554606,68117140,875272368,159253968,404845277,36061266,950259174,509660031,77587102,721405528,522409106,141730786,895586927,263787214,986223588,653098874,994703506,332468978,91823746,375720030,636394160,535321927,100600371,343686677,6705073,815036508,521581619,473830589,989047699,765288084,815451212,1710844,924213787,880632727,515098184,604519962,842082153,989626763,735521182,924562431,993885410,521334972,445269085,561327191,545300550,439356632,957439616,146606444,366844290,406181018,422524345,886614167,867982312,526687450,780865536,356293822,77727253,754438172,607912278,199991817,625158649,819001868,905220513,911614407,511092327,403503226,576965039,799127625,719012447,378631432,134701350,516576521,599352816,341134140,535490480,114264998,970568575,722128526,122756755,122719917,988485371,599212529,759497583,101897911,773225129,938543673,145263326,868973045,325716994,289881078,907675146,950959167,335713218,143234813,502153644,11831828,825053594,532778911,246987970,314759497,733344124,780930546,277649222,224972073,618885691,191153809,26034048,316854828,769770505,732227248,581156659,31979100,94684352,114524617,463863272,379949435,89297982,936064186,480497186,498031609,663639540,738981494,585903638,946573503,621147659,598422500,623041941,489161973,614486450,165212309,530810305,295835098,472106204,268798967,158195375,735640605,40453438,991474577,170664782,256433329,239397747,982195035,54922490,628133,803746675,753864707,220153344,819109173,775892672,679491177,248794025,11273242,807276128,875166011,1467238,231839046,81473267,69125371,261127968,943310991,180141680,764388399,228470973,497702692,9609067,271111992,474276044,388885825,929338776,599760117,641814252,689941314,771024257,425155146,570608107,684740625,510196148,726155836,907581411,53622768,892607787,53912876,701140351,18731321,29387094,135063983,485139870,184071218,927999225,18818379,752296214,56034603,929569592,759922357,888113092,955784648,91131113,395681241,181826734,773171241,25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68,104721328,928029584,432943367,56057891,384643847,755290526,551784674,667795775,530551825,28428865,482525527,926697317,474856043,30875109,897808746,965867057,5018272,545998537,581159181,897575843,665684017,661041741,694901725,704101814,358883681,796017598,466568903,297974089,702760255,777859906,852257732,144516011,959518046,478467119,406528136,67916996,62823949,113070268,781661669,968111446,552786583,481267298,96670763,424702936,697965924,708139434,743066353,602746170,200618579,478346133,703250226,677377449,907652525,923436343,611366918,990456721,947413545,797466299,377725332,48718989,669674390,746826731,934233687,49634729,880299931,981395929,25835212,101612967,24568765,752903580,15395023,337884681,131485021,817932982,661633637,906941447,233440783,487138757,402278523,661721271,997005152,347303878,331086928,60472435,426850232,882529114,238881732,539970823,976232057,786745006,872649896,849308338,234568931,119837323,517903827,283668633,524086013,973535391,957212196,246136481,918654950,570402585,993678014,88580216,723336035,213250138,600391370,262341656,484321609,23675985,701433274,890331741,987462966,150453822,299454404,121174168,410286126,853475714,110928836,283699870,606346761,719303138,514373700,544214430,293165835,841188526,339358525,801940815,558032984,404379623,855701789,810398462,458701818,736232063,757303248,746441032,201585582,510653865,554016561,519949809,758675447,925461,132252992,101794687,503405439,334494245,883081492,470101637,761571540,825613453,528766364,203144004,234219645,640729759,277546915,171794250,579928558,223300037,63174114,15106860,147918355,442711388,163960970,466026830,129535342,996305140,650242242,803059496,400654646,539471546,616836537,327424212,99032886,318990974,277699584,61119948,908106077,499831996,93211312,980439583,924261634,732508460,372218855,145103521,410270252,728971019,247249901,53675927,303021059,706512852,225075430,61680017,823821146,165932285,490102638,227989147,918508077,577109947,346386485,615616167,728112083,895018514,236594992,814356925,70812349,306339713,501307137,308726280,979571460,187053562,38649600,301541655,866332756,321424315,781023657,137709557,286133316,652513245,481102877,634525418,40867437,494725276,232931507,29674025,698084494,119816642,81686805,114580891,808480095,750894715,94878327,128698669,714653030,446156643,685528257,663113366,12665748,457073644,896670333,585069352,471882382,56928251,165115535,706874421,31425949,896633210,750933780,512300493,931122854,690442800,907216780,684748504,594867357,28620787,269869756,77141429,769052498,942728271,696106447,355269822,523365262,454734134,751548232,473067857,813814454,905914903,458525110,548330173,970461458,706817609,247710288,652236863,608911328,890123666,576270230,461098653,757685023,845231082,276689095,458278684,753082701,863960625,194852589,552028176,138983437,469191355,391011772,405042895,658336056,84623609,214575985,203729291,630601548,883760183,375690558,404944372,271558491,630881935,506882330,410486724,602500469,532493005,878642159,992229690,298868117,811859557,887645178,674892078,543002538,154025114,182252946,106333019,15138691,324377444,242910619,769824754,23382694,871443638,377697720,921381159,862206637,109675104,148440665,802624228,133706056,857342944,914090713,325306356,174395385,310512443,747227459,2347094,211602385,25495312,80760093,382487597,468536368,901286453,181762255,80267791,67893150,930290081,580792724,712637701,832153647,103671033,362059407,302875647,581610795,416090067,973635342,586014381,208946349,471735042,414296751,228330804,808094937,703771744,555916845,978172643,336785148,524154851,426429998,730126311,890265816,783051875,274215774,410460337,631255271,291902697,20125717,219411339,670870983,742908476,992916930,9268311,724616587,43804734,123448198,789371523,972817870,789964332,159232630,601706142,898607104,77021685,302259886,743077956,332224370,137887973,427266499,686633523,458950774,455292313,194711845,19941132,857212678,683449954,589533920,796469759,778019896,37784364,553221272,366882024,199643638,863300455,358084959,472694526,427760249,619365970,697811371,312287403,126335140,482119260,961916683,640208077,697835661,691000428,500979862,782422669,854876604,684896042,371677112,131852147,123628665,131688682,192967569,144445778,422589505,453723214,261082025,858082427,474111249,56005966,169073050,651091354,542942895,731147347,577208951,906916919,252771679,589229369,488409386,735257433,422373898,150839838,683277921,78778384,868845020,891933747,595440535,968299525,324995932,891313169,15510173,913622435,755839996,802758684,539662716,319808888,13138982,220880753,29072364,787892551,313428244,860377770,338329217,166837578,649290947,276988492,384290413,21406990,48681255,23057011,985356875,927297827,975965396,412277977,243212837,977426746,108181549,239732966,228221797,879877061,284612056,637894068,29732716,246100368,669256291,719423493,650277037,292028573,105758852,177717188,95861517,826947800,870540341,527956831,615705116,664919988,1822380,821528310,993871564,544112482,415554442,169253423,99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,567414063,520025551,879852173,792428653,799338450,978395111,22123225,381533795,166868867,989520744,685003430,341820265,948644965,55538773,856533047,443612466,808284783,517284586,764023795,634899686,433000573,228870963,627523174,991445447,363014899,208591268,573170219,988796934,686947369,835032484,639958619,324617947,408292816,520558499,980440906,280764972,735893465,483590071,877979224,373269496,105414697,410919125,261068250,685765608,789404936,648965096,921532148,254375465,227655133,530144521,507286046,236898511,376463705,771340321,38176532,571731727,850864392,668700100,818971624,136618861,813687551,796894353,134628347,183588648,650184699,45694337,60466549,532552957,409878935,670768256,707637715,702677957,279306231,235245355,409273550,695274070,3388316,704425187,743079433,139248441,391891191,607905967,205810073,70792439,802393304,303328882,568340545,106560604,435805710,737158631,95691940,987046069,508131243,826834063,730388004,125082798,652087657,280446769,544743965,682278385,859711029,445023617,970541679,80484139,926608930,514606309,706412397,835365122,858947382,486054604,421570709,406997102,894408719,60277993,663627827,508227906,555453799,230145129,869448276,69428228,714817525,758462733,838086925,636875657,827441776,810743044,23148558,46564282,677814237,638121812,535428735,719899404,393550889,240849391,382228706,360153276,528265886,673920893,903563375,29342342,155039902,606816097,15950317,879074104,235076504,81163375,675792470,251272440,143145432,287535636,240064597,755424912,252946454,181110840,936918159,848458156,634739962,315626432,769139727,84603935,241191470,903952432,344668867,75491750,799257059,264518229,468775960,740921741,404284915,868057773,967812593,339810929,562447798,84879763,561326343,621123633,495004632,19881190,664683428,710356053,620094751,357416556,334520825,516403261,587376290,187681653,619848519,459307808,725776751,181387869,664437607,31827888,593359685,981798494,467489692,720993343,3116854,487320760,545347017,509041024,32557424,912663298,103662208,837422722,635193480,538418098,649050864,338359584,676765493,234288455,624021741,406343086,374158043,931090525,70835635,543978541,25649733,499717470,334743556,20167958,870542371,2583701,65344379,330785323,352566725,56804307,834670874,860442105,399254632,778746313,806538086,745182843,534581864,696594622,988917992,97950798,891722350,534474496,728280121,84798933,43484932,74415335,370981318,178097082,527770028,335191967,217859718,219008286,143892259,600994417,82932098,619048095,476260543,264983547,263305224,457975298,579178595,648600330,982668407,295802481,95757424,339368810,401765627,955505686,964435542,261865329,66501676,572823642,326671754,357011998,712358696,918615776,186638272,578880311,136101291,547647704,95278546,19369196,537218274,717041130,686424266,424726839,657383089,568845913,180389071,702076377,228305579,101257912,385455145,793489565,857170673,615556714,635922415,711716602,974672491,260732727,581053704,59616044,746109069,96404222,323436586,566930700,224356504,817530504,420487105,164861866,319212635,289429426,949400354,530610042,343998259,31828510,923543684,448040446,751999479,2011725,823957038,798342761,931283072,112972959,733916541,113860940,39166765,323254338,531633542,263693647,289503537,103274289,663811716,4149928,292614457,361849789,7288175,86373472,982758329,578803828,139160871,627471199,944823339,834555309,666046460,433208062,350342407,532829126,108953680,576349754,238003512,796467504,100537800,482189728,422212104,222203517,763239018,164733790,195436514,112171619,392277539,993793111,297437249,617194572,915471786,826656697,138257212,199800992,511535058,871267372,843313592,691971567,613341234,119375944,8444793,17882317,215590393,405836502,175971986,707987727,840979437,230410283,148494755,65117427,824419554,132907670,681881477,447750356,271435787,564953890,120543274,349665870,944125395,423375685,817985881,715918862,328889449,804665476,300633749,794695516,431194805,505751757,32468103,449353415,886238780,336254790,981364527,724514671,678266452,222380802,484652939,937460390,998502019,777000464,215454009,522391925,603789506,473142638,697870722,771428558,152370698,899836661,121730151,633123851,125417649,193821591,975477778,432344663,110076295,362147978,60453280,623844851,477798119,398233514,509609480,426215125,171600319,596953637,915932936,704413649,725993136,701118795,691309837,117191535,41504586,312676750,188391797,292689515,164986847,825179048,799647794,153054166,181099583,745778088,140958244,100936446,122644986,200152762,604236896,994470249,929160837,409152449,347674318,536840024,560143277,159892057,313194126,309418406,35269658,407045104,683018714,706787660,443442174,173816071,178236998,587633668,875534252,996786835,12992922,701943187,687052027,51298682,934076409,910991911,210308477,383009041,354127498,713119087,526396192,940829358,356159527,896389483,634057830,506015164,489699952,891951034,661535492,122892728,837442553,483877482,441463026,475587445,158684982,453763099,650836496,735552783,620009891,675166450,792905532,385283950,1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1,264972810,647094564,731487211,444289596,832144484,31945607,682873227,758479113,347202854,525341253,714768491,167469515,567683760,211281370,8420801,207447169,438175622,630125456,249049532,206156610,848476804,202012157,288051953,932396312,645688238,50449807,359666389,716060150,83965669,10055904,149433891,650853118,786763942,528375254,562589965,46033795,271396758,28045830,929058382,527212385,53082620,249161792,896214861,195923043,885704539,924687186,927708190,649657086,893188656,317221993,245117661,571133477,907731919,185862614,419967176,745883018,448449455,760796586,339658195,605523225,367464290,311021907,6585427,521348635,128623772,69540916,222893763,948989023,13282546,235094188,420577102,73599741,992612428,64113328,270170589,8603537,639929711,674567948,507529429,770936489,15925351,754353822,222566974,985031533,808330941,314593382,625413740,692276430,152043319,400807106,987155559,814809606,302683890,662396281,96856039,174345616,623245029,449650961,990280968,690034109,173159256,74635550,473704409,87084538,674000509,812783739,536248601,900317420,585376420,678002221,334166573,15683673,382130550,79644156,691036389,61968435,860689813,79434256,812653652,448554370,323592839,116711798,860961798,910011854,112362726,100404049,331499884,480786892,615175136,170703484,108763671,478325497,362475035,829767668,323795905,709677129,879585172,420910050,546350983,180681194,388434226,397667471,420259256,936738710,46577098,196588896,198809576,693472928,459346645,618995329,178675435,355565441,414207089,678429445,857146805,510190007,237760862,831381131,838070137,768441506,80138959,271674582,631660824,416414877,454508873,968237380,504048233,381635076,235058817,194837256,980878937,2276034,901907777,553210096,769063017,849495657,281538433,599873198,605673874,343271205,182684458,154370810,237392661,478214872,693234417,216805331,817168576,111441185,299050655,129292392,370695580,838128541,913435310,682527702,97158430,830186521,991337220,691943218,558291042,387170688,388099176,422480084,877765151,840100120,529900564,811714808,396215236,167712284,193499,222197154,378895661,836051556,68779550,412933546,619020731,789657117,662886767,294469706,76607010,609111137,517055634,421095881,181651032,278984716,998005977,758611395,556771363,447001773,61321177,568643988,467413830,890498189,654650108,207186091,438415377,763077986,257656669,94903271,896725343,153605888,912618542,87593908,926139926,391180047,46550532,546422572,92599742,585066014,472059389,125585133,964631988,778918126,995834335,220739022,476515010,975382152,598315618,299450483,942862398,423431008,230293317,443453633,947984635,642685230,574711060,275000905,809524917,774628184,302001191,276172158,580452844,88945685,164332494,940845759,199801839,312633878,692514930,639263545,361495983,918777565,757794502,414590919,436877669,647486487,297464355,311498689,12468588,473911518,43780690,169098268,597360620,981856207,951236672,936676849,802463063,41275518,22784394,324595659,347438098,867304218,765467428,532919344,653907535,445828717,561330179,673577467,614378763,210909614,814851135,783743334,566511778,176678373,662771611,507592475,255500696,408991759,191320025,705877493,623364525,628534104,821081157,837872760,943191656,105005677,685966618,905036517,802945241,502036978,274622470,226066270,671151853,681961827,508950946,222242114,54784212,179872312,924384088,365026283,753265173,664875167,959094005,618193516,951105588,34673078,924121261,496552546,209797689,476136794,499509943,562718670,514461077,920274721,270110407,667376342,576418759,273441995,141982052,713903741,602861988,272693925,995582934,414389226,533840993,421913551,927510493,504133604,692871207,868385114,653492983,38834189,365824059,516255697,550288619,557912217,507410166,792473643,75620846,330622190,139356164,446789361,449440106,896169105,875064101,94177750,949719172,197579250,82482337,645595492,105399537,44277395,158627821,973277289,721094605,681195722,53833485,319144642,136975710,822494541,803408654,964347796,497556547,711023067,651811147,178014755,283249341,68260608,364137216,795010962,46227658,35132014,527836106,432127513,841220328,328191982,959479980,861161756,923578695,945423371,963231170,671500775,680478801,70300438,474425351,248573744,666024419,598174050,756075840,158378944,534940343,161007377,304969553,797797744,354207532,504606319,416322319,406407365,647139596,381979157,978110295,965361506,782760921,591053103,31775954,902030244,483859364,908513903,916996966,231053451,607668312,929754141,458757716,947420130,222731474,451731652,597479036,391416219,221504731,456032722,934530776,172726770,785025857,755208850,339085041,702976555,1269405,4020369,736182551,685572327,991647780,521714492,337716691,708337741,605309623,970258939,73881130,869585911,622089022,507160157,400965347,901434248,296930755,321400636,842010228,687363497,930555070,467648672,398744947,843217789,909985023,383848992,260988389,224539511,592644092,877655581,369915125,886297457,878534259,958812273,209542653,196637015,155250134,827864640,694296924,542600504,538303449,948308193,8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389332,157202082,221970138,998900853,577786292,190752823,801842797,461133985,545964152,753934226,513312743,815336382,381887706,556593018,730014001,961873399,498880060,909015939,504724970,920033342,698503915,619822277,735076318,779031831,522115077,128538869,185365423,52361055,499227358,156214675,558879832,376912273,514792778,190455103,578894432,31382919,744306846,417686333,747667703,335491771,911268595,497454772,255429973,931989043,663484441,93072703,687057366,650128465,294006417,370482770,692245260,901993597,76079729,418692050,471363813,729664622,87074703,194240055,670508214,615185697,295637834,17670753,496628792,881792573,960647579,921272912,746970902,467603169,945443636,291578122,976586646,50145598,327125373,46390035,297688702,25122337,132086513,914783010,425681877,323324699,907208872,943357897,347301113,734900494,422125688,153381210,508262558,217370175,238400474,659904800,898164346,151372776,35372255,336877705,226269651,221768429,555435104,359403705,692861576,251317965,910037657,434554514,977282927,362834167,885999403,109039745,655638148,133178034,130271978,897234579,188130452,258192959,245647121,934003611,862221535,582093051,71949123,576684983,611546607,823641171,923524274,911426933,498178941,353529742,343322486,238035992,957105308,742222329,315464525,564313526,122976460,183962977,1610347,857432910,403383243,307437185,690176551,107087723,110081609,133086005,564852473,980602192,265021107,492394136,455975725,668719877,917008309,715306580,67153960,177126697,676366107,81017101,606056780,201498253,230465635,177854935,179038652,622296513,360054696,579705767,499296694,965750645,271756996,568280384,345573246,435325208,487740181,258084262,881430184,764873290,691007435,288702367,801920360,970815767,473632002,489291040,401331742,294610254,34241600,201776282,114749936,265210623,695403657,439183986,218349699,261461603,733571192,540031274,174223658,273003323,316597543,776244498,492982419,494912637,808279991,456756268,105886596,702621641,426430030,615195882,937163810,867324832,606110274,613232813,954230926,378686640,210360295,158426381,221998912,387610715,514320298,584754595,322905112,837437517,207579856,840044278,632422867,523385480,995951621,462815935,443838369,141847584,585407852,468081094,600074789,866287386,349091909,332299202,3322901,53455526,552150975,712222280,849185354,492953389,794374455,237773873,881854589,903216261,176375609,442073310,841353159,860711725,170898182,799777731,273387291,506464572,664085641,344526132,157365534,65654639,966138600,498823879,609598434,255771886,101878817,764019769,506584987,291230917,506076450,464277504,681938319,607953152,19609619,671396373,272179129,878302263,114773600,658511203,482265354,15564146,493132221,610792393,266150764,673434880,976365146,472543323,939216843,476270944,517921534,739249338,362196668,360231540,986382717,774577090,851305259,140736104,12450738,234988893,705345289,124828275,794348146,893045804,287319432,125353858,58487134,974174592,205994212,74528731,844593016,166488468,173874247,303302177,235855026,287160673,108344096,399821308,127749847,388551560,814442763,995584055,9415361,266736185,127818491,524935581,818732514,989649158,519402147,205766048,654281569,654912134,199705378,626001097,45754396,247920820,877435145,695024212,395313429,326134375,82545690,548105942,385049684,717332102,723326580,500899863,13030218,168727113,898703867,910184361,845082661,99382453,593886696,494594660,113912762,477063178,516322690,617282987,617411390,934422043,653989386,805799735,182787211,706894474,763786689,394211698,236295073,774503817,755019391,356828380,24928107,469808287,244820995,381418911,989095744,852591787,161709017,706270120,763848584,864989548,512086433,456334176,513499426,473590858,269702702,938942687,120659123,189724762,721111673,954515085,587623873,586160005,313425554,6992735,566657590,955630901,250500278,944661872,32816203,503784376,667323642,158778311,37160663,440886616,579108227,658675895,78929206}**