差分数据下的预测结果

N\_estimators 和 depth之间的网格搜索参数

**1. 从[100, 115]\*[5-11] step=5**

[(100, 5), (100, 6), (100, 7), (100, 8), (100, 9), (100, 10), (100, 11), (105, 5), (105, 6), (105, 7), (105, 8), (105, 9), (105, 10), (105, 11), (110, 5), (110, 6), (110, 7), (110, 8), (110, 9), (110, 10), (110, 11), (115, 5), (115, 6), (115, 7), (115, 8), (115, 9), (115, 10), (115, 11)]

[(7005.595799326005, 70.05595799326005), (6164.885486604428, 61.648854866044275), (6378.55763003992, 63.7855763003992),

(6916.090843234908, 69.16090843234907), (8466.486444366647, 84.66486444366646), (9997.818455351044, 99.97818455351043), (13656.348986881496, 136.56348986881497), (7194.830074356179, 71.94830074356179), (6167.594190452531, 61.67594190452531), (6297.014043091955, 62.97014043091954), (6667.918620025681, 66.67918620025681), (8222.19172041077, 82.2219172041077), (10387.035092270442, 103.87035092270442), (13305.228910408037, 133.0522891040804), (7471.053033329155, 74.71053033329156), (6193.850310662738, 61.93850310662738), (6185.425558001143, 61.85425558001143), (6744.633709972408, 67.44633709972408), (8125.373611334686, 81.25373611334686), (10293.517838472935, 102.93517838472935), (12577.60273938708, 125.7760273938708), (7608.675878957687, 76.08675878957688), (6171.026357703914, 61.71026357703914), (6149.601769916579, 61.49601769916578), (6646.755304813297, 66.46755304813297), (8177.995850510578, 81.77995850510578), (9869.401105639747, 98.69401105639747), (12465.860157263887, 124.65860157263887)]

[[3.484996584315367, 28.687724201268562, 0.97298606214188021, 0.18097216783115183, 0.45397358990148973], [3.458922923509606, 28.394563777684429, 0.90247034733065901, 0.16444280906736466, 0.43940691645888452], [3.475502369568159, 28.294748526857294, 0.82566852884099051, 0.1460779511111031, 0.42596693218532733], [3.5439458024813644, 28.913947071897972, 0.77806141953292962, 0.13338735388073167, 0.42250642329789345], [3.652919823764202, 29.604406648850627, 0.73456740681979227, 0.12229023072883045, 0.42285650242474226], [3.7416267104316874, 29.86266883827534, 0.68820804819902259, 0.1115431242318063, 0.41595439057684325], [3.874061701819219, 30.509660079963933, 0.63284253941301127, 0.09855664650372678, 0.40563802771445423], [3.48452376243419, 28.66554711459003, 0.98716551305905043, 0.18427282730111488, 0.45286718603999665], [3.4513946697109894, 28.359484181532476, 0.90882700527227211, 0.16572998922696752, 0.43836048976917263], [3.463077373912004, 28.217242386257599, 0.82546190446681933, 0.14609852146340044, 0.42332603433024318], [3.521832067713035, 28.75037819509701, 0.78702580617088524, 0.1356177816237899, 0.42193135178592167], [3.6401668537702982, 29.541567315464007, 0.74015026469892287, 0.12347156104486685, 0.42323732309304407], [3.7663392375596687, 29.971653556901941, 0.67886365688042871, 0.10936304873840412, 0.41471924663261794], [3.859842778595568, 30.392376336360293, 0.63451388348400239, 0.09904314851694149, 0.40565396924238439], [3.4870134173050253, 28.678482899030751, 1.0010187066416862, 0.1874718305736681, 0.45187835650179331], [3.444796533523832, 28.309450530492356, 0.91632785407020489, 0.1675150766095164, 0.43739589183986871], [3.453288714839476, 28.149436551637674, 0.83057938626905381, 0.14740440901812535, 0.42249238689505475], [3.530074706946587, 28.803340266897948, 0.78250652282304112, 0.13451776149494546, 0.42161722056833417], [3.622484433410631, 29.322829075177022, 0.73829371355129725, 0.12341139383788463, 0.41998368082673887], [3.7599376559256403, 29.943211296748846, 0.67860668605625041, 0.10918969423074965, 0.41342640473406134], [3.8370543227473455, 30.241790155905704, 0.6359090300201955, 0.09966682392052982, 0.40265940288527491], [3.487990792428934, 28.706999566575831, 1.0069426654697535, 0.18867115990539818, 0.45085054000869806], [3.4402272985163695, 28.268451832492122, 0.91788427805379014, 0.16800791758430317, 0.43620277848398481], [3.4501148053316775, 28.137953789474672, 0.83345742988295557, 0.1481188217019651, 0.42252022329910965], [3.5209077488646123, 28.714926777871188, 0.78563886552378304, 0.1353421756988153, 0.42183946283947249], [3.627563833144203, 29.344166635455995, 0.73387803383702621, 0.12229065455635886, 0.41889743443613381], [3.7369555515672825, 29.849339537604965, 0.68423835652694831, 0.11054337885611794, 0.41244236495003506], [3.833313116451677, 30.211294281979459, 0.63670598662710642, 0.09992320212100032, 0.4028157500467634]]

1. **[120,140]\*[3,10] step=4**

[(120, 3), (120, 4), (120, 5), (120, 6), (120, 7), (120, 8), (120, 9), (120, 10), (124, 3), (124, 4), (124, 5), (124, 6), (124, 7), (124, 8), (124, 9), (124, 10), (128, 3), (128, 4), (128, 5), (128, 6), (128, 7), (128, 8), (128, 9), (128, 10), (132, 3), (132, 4), (132, 5), (132, 6), (132, 7), (132, 8), (132, 9), (132, 10), (136, 3), (136, 4), (136, 5), (136, 6), (136, 7), (136, 8), (136, 9), (136, 10)]

[(15978.315282776806, 159.78315282776805), (13028.803945224061, 130.2880394522406), (7457.806013946396, 74.57806013946396), (6219.233071932849, 62.192330719328496), (6086.2786958635315, 60.86278695863532), (6700.25013841824, 67.0025013841824),

(7988.825424406923, 79.88825424406923), (9974.93778739388, 99.7493778739388), (17119.984890963504, 171.19984890963505), (13717.724424358867, 137.17724424358866), (7680.63314600449, 76.8063314600449),

(6260.75887817902, 62.6075887817902),

(6001.847772693151, 60.01847772693151), (6648.588076139987, 66.48588076139987), (8125.548792430803, 81.25548792430803), (9550.37330107542, 95.5037330107542),

(17716.57335408351, 177.1657335408351), (13928.588873821342, 139.28588873821343), (7728.3999207604675, 77.28399920760468), (6243.229712060867, 62.43229712060867), (5975.9918314262795, 59.7599183142628), (6546.955970242367, 65.46955970242367), (8204.124576083173, 82.04124576083173), (9870.921535325704, 98.70921535325704), (17796.174281235635, 177.96174281235636), (14332.375776218454, 143.32375776218453), (7813.568157555661, 78.1356815755566), (6317.404310053704, 63.174043100537034), (5916.0545787166075, 59.16054578716607), (6547.344661303757, 65.47344661303757), (8202.873694164686, 82.02873694164686), (9924.017875619375, 99.24017875619374), (18457.52066030929, 184.57520660309288), (14933.670573899552, 149.3367057389955), (8074.942938632691, 80.74942938632691), (6363.209976051848, 63.63209976051848), (5934.498983046598, 59.344989830465984), (6660.838942604925, 66.60838942604926), (8204.043817880905, 82.04043817880905), (9855.584014167067, 98.55584014167067)]

[[3.7003610239738935, 30.615132640229689, 1.1786735519605807, 0.22443929852013159, 0.44466723299969091], [3.6349871048022147, 30.079120419656885, 1.1395007889571589, 0.21683258637098882, 0.4485552959356448], [3.4791462010947294, 28.641772869502667, 1.0022061717628032, 0.18750846378610808, 0.44791823871832004], [3.4396017659463585, 28.31167849239911, 0.92597629378006474, 0.16968569819158727, 0.43665668194811735], [3.4422651878800106, 28.09938453667683, 0.83458184529310786, 0.14827641416264026, 0.42108003892313528], [3.5241470921592457, 28.731832369691297, 0.78311540903339816, 0.13462748791884216, 0.4213977840064157], [3.617602281257057, 29.279135549141827, 0.73716011925266489, 0.1231796411152985, 0.41865883825609762], [3.7455202478649574, 29.934534700929397, 0.68279747606054886, 0.10998600022301101, 0.41317773978197803], [3.7278834083453205, 30.86449131824622, 1.1932420786419877, 0.22703694589384554, 0.44278333303975692], [3.652227917572375, 30.221137984821826, 1.1503742981802729, 0.21887403492428667, 0.44630457123740608], [3.478842292802211, 28.63082914585139, 1.0115420271679991, 0.189458464173939, 0.44514531149455894], [3.4373970285210054, 28.281903197130113, 0.93128565557850673, 0.17095291899636156, 0.43625817578734527], [3.43285118541938, 28.056060165415534, 0.83985718874152548, 0.14949030556619008, 0.42031257356494445], [3.516809610319321, 28.677214080267078, 0.78458129479731031, 0.13503551365701302, 0.42064466308852344], [3.6285279362871408, 29.36854433284914, 0.73350311431417636, 0.12229468264051156, 0.41867909387241586], [3.721609222218322, 29.759113828333128, 0.68926821557288909, 0.11162838109914157, 0.41368598028072856], [3.74414287148703, 31.018712411068989, 1.2015891749896783, 0.22856760314476535, 0.44210789233755921], [3.657753679244753, 30.268913550113119, 1.1541041402601271, 0.2195825351767078, 0.44570767577701853], [3.477305713667523, 28.636613946838864, 1.0143548134165856, 0.1900337284368047, 0.4436960857234663], [3.43011783023132, 28.240009545517204, 0.93222784194357444, 0.17108126350332284, 0.43388431297711949], [3.4277107629504373, 28.034119327471799, 0.84733742645136856, 0.15124490857940512, 0.42081942340192324], [3.5121675413880378, 28.65459208896856, 0.7850128366060507, 0.13514037800292905, 0.41997848314853092], [3.626249788312757, 29.353652134105506, 0.73266339222800825, 0.12210398758519875, 0.4174303608714437], [3.7405758032486616, 29.876849850294779, 0.6838063296678305, 0.11041448321987046, 0.41353147525172063], [3.7478732575376865, 31.052638792157339, 1.2032066640421204, 0.2289289076645748, 0.44199036337321662], [3.6661194820683307, 30.343578181262913, 1.1590695028627853, 0.2204894057643548, 0.44424005123863419], [3.47565431613141, 28.648107384397626, 1.0181168545786627, 0.19075006616370171, 0.44143294070738071], [3.4285659020200607, 28.23132078584527, 0.93808787396430593, 0.1724355367174287, 0.43350555681294889], [3.4188617224527835, 27.992824175711757, 0.85478429994534633, 0.15296592589582642, 0.42044864854261066], [3.512922984269194, 28.666307431410193, 0.78880229564165982, 0.13618892576273572, 0.42138081161097229], [3.6258468846997887, 29.381299115292137, 0.73556041176577924, 0.12264393424814889, 0.41898165225722583], [3.743572800262948, 29.926901757536839, 0.68311825949916372, 0.11013892825224791, 0.41375010519037136], [3.7641350693091526, 31.186013688357306, 1.2112730518518686, 0.23045883012979007, 0.44102256038599208], [3.6822933199910914, 30.489225513179036, 1.1675997609310733, 0.2219675814649654, 0.44401241859669605], [3.4834332764751226, 28.734427088115911, 1.0278293187713681, 0.1927602477657465, 0.4414201865409717], [3.4283345384033703, 28.242706354812334, 0.94138479837099343, 0.17311582450545185, 0.43344128967268025], [3.4212350057831604, 27.990606504296739, 0.85494335819233513, 0.15309877665400687, 0.42112367820982366], [3.5213877899450226, 28.754817568538439, 0.79161743557902087, 0.13674960625161603, 0.4239370994246795], [3.6278328580744916, 29.42257178943186, 0.73586799842296446, 0.12247770195026479, 0.41963605117336011], [3.733243633779212, 29.845433523445159, 0.68403615025380571, 0.11046607180275879, 0.41252909296062557]]

1. **[70,95]\*[4,10]**

[(70, 4), (70, 5), (70, 6), (70, 7), (70, 8), (70, 9), (70, 10), (75, 4), (75, 5), (75, 6), (75, 7), (75, 8), (75, 9), (75, 10), (80, 4), (80, 5), (80, 6), (80, 7), (80, 8), (80, 9), (80, 10), (85, 4), (85, 5), (85, 6), (85, 7), (85, 8), (85, 9), (85, 10), (90, 4), (90, 5), (90, 6), (90, 7), (90, 8), (90, 9), (90, 10)]

[(7371.912942054435, 73.71912942054435), (6596.841195030522, 65.96841195030521), (6750.385389140629, 67.5038538914063), (7770.891685671071, 77.70891685671072), (7853.76714422079, 78.53767144220791), (9542.410013465174, 95.42410013465174), (11620.832115402009, 116.20832115402008), (7936.468410839338, 79.36468410839338), (6613.495863417636, 66.13495863417637), (6581.62543424957, 65.81625434249571), (7393.25935422312, 73.9325935422312), (7621.38698576834, 76.2138698576834), (9495.006206200322, 94.95006206200321), (11065.415964086478, 110.65415964086478), (8333.372270869604, 83.33372270869604), (6673.711473598608, 66.73711473598608), (6387.643362414048, 63.87643362414048), (7252.598147378081, 72.52598147378082), (7598.6069311696465, 75.98606931169647), (9039.470052934596, 90.39470052934595), (10568.89704507153, 105.6889704507153), (8554.855707774152, 85.54855707774152), (6683.432791197416, 66.83432791197416), (6358.62779698287, 63.5862779698287), (6819.9392565176995, 68.19939256517699), (7352.9984400459725, 73.52998440045972), (8511.343964378257, 85.11343964378257), (10024.209726263509, 100.24209726263508), (9092.167016304229, 90.9216701630423), (6724.314369093652, 67.24314369093652), (6277.2685985905755, 62.77268598590575), (6705.975400875106, 67.05975400875106), (7390.83600570411, 73.9083600570411), (8505.1809134816, 85.051809134816), (9879.95972960105, 98.7995972960105)]

[[3.5072278825398993, 28.854166481495554, 0.98155723258661398, 0.18432354792482475, 0.46169983314148488], [3.5188991311319855, 28.929495784480068, 0.90380046682706794, 0.16470543050674868, 0.45588577864083513], [3.5604306612445162, 29.13955028819095, 0.84126681586815466, 0.14910599903362565, 0.44726186300427984], [3.61555278911015, 29.43957045056943, 0.77436226013519505, 0.13204629068985083, 0.43198967266375532], [3.618899526653731, 29.445036961427761, 0.74732826410811437, 0.12538158498633745, 0.42262053944248645], [3.7338801459294824, 30.075553728280241, 0.71342745385643613, 0.11680355029237356, 0.42512540793029641], [3.807849070478942, 30.175154866303366, 0.66953690686983725, 0.10715935737604786, 0.41678011277539195], [3.5044539192053383, 28.802301865399777, 1.0093717939440907, 0.19072200868877154, 0.45784383911990822], [3.514448102701333, 28.944206543923244, 0.92534819106096278, 0.1697076390305613, 0.45912264512340351], [3.5400915565257134, 28.967657873658709, 0.85445174807026669, 0.15258742431683112, 0.44762277937549033], [3.5825428306742153, 29.180414465432992, 0.78486493125199563, 0.13485363101691028, 0.43144604808648945], [3.6021904498186355, 29.333484708830351, 0.75175235264042128, 0.12639636258049353, 0.42192450303581042], [3.7245345938664616, 29.981716527859213, 0.71094566031325701, 0.1164173776697648, 0.42261455320058949], [3.778487035855245, 29.948461275900073, 0.67657836729597842, 0.10911134682927447, 0.41563649899799093], [3.514281926941763, 28.919149490496746, 1.0296489266696656, 0.19489990941348295, 0.4571458880918714], [3.5004613025303386, 28.804762791700504, 0.9374765491178616, 0.172778542947263, 0.45703001711111835], [3.5145550643374808, 28.758185404852526, 0.86508103583425222, 0.1554502060997582, 0.4449113584461083], [3.555743259508036, 28.927213446503242, 0.78857144036032878, 0.13612833233220503, 0.4281995779213793], [3.604617736470682, 29.387272836317969, 0.75629051504866307, 0.127337251971073, 0.4237930533379054], [3.695967955491633, 29.832104043454166, 0.7185701661102365, 0.11815563894447521, 0.42182380494331495], [3.7640927493408487, 29.878552481187583, 0.67826444167490507, 0.10965795536286714, 0.41381454166400611], [3.514350421778929, 28.918056892664492, 1.0375473003213789, 0.19661347214495883, 0.45449242493961006], [3.4918051741958633, 28.70746275990043, 0.9468508463753561, 0.17502864755689715, 0.45535442059662301], [3.502727058912396, 28.685606005619398, 0.87702960384099682, 0.15832688144668347, 0.44562686733467949], [3.5164168594990546, 28.599892149675711, 0.80206329106706209, 0.13987860301220992, 0.42649814940641562], [3.58417906212312, 29.270459182778662, 0.76579207176305841, 0.12967402576303688, 0.4242620609334099], [3.6492897763627807, 29.502913158232541, 0.73083759751928634, 0.12135718033770479, 0.42090167260487732], [3.732350675846324, 29.725518922902587, 0.68774121538108401, 0.11178178975266512, 0.41487726206151188], [3.5285167285123378, 29.077073931238601, 1.0543613660103019, 0.20017558508572883, 0.45443898394305815], [3.4845943634081835, 28.671280409768773, 0.95279915215317057, 0.17640166480340663, 0.45344276198605971], [3.487119979364138, 28.579665514711269, 0.885838989430909, 0.16043155927392885, 0.44374942167651088], [3.508964055374899, 28.536763848455003, 0.8048662130487052, 0.14061495029973467, 0.4260478493549763], [3.579461281348722, 29.196873833440282, 0.76439397833299028, 0.12954738123787074, 0.42323409460426975], [3.64814032053885, 29.556181607686067, 0.73161647636295446, 0.12155077645039482, 0.42074798377583944], [3.7292666930860205, 29.726287914100148, 0.69055279216849352, 0.1124946976969382, 0.41514036993052694]]

**4.[140,180]\*[5,11]**

[(140, 5), (140, 6), (140, 7), (140, 8), (140, 9), (140, 10), (145, 5), (145, 6), (145, 7), (145, 8), (145, 9), (145, 10), (150, 5), (150, 6), (150, 7), (150, 8), (150, 9), (150, 10), (155, 5), (155, 6), (155, 7), (155, 8), (155, 9), (155, 10), (160, 5), (160, 6), (160, 7), (160, 8), (160, 9), (160, 10), (165, 5), (165, 6), (165, 7), (165, 8), (165, 9), (165, 10), (170, 5), (170, 6), (170, 7), (170, 8), (170, 9), (170, 10), (175, 5), (175, 6), (175, 7), (175, 8), (175, 9), (175, 10)]

[(8214.956133586336, 82.14956133586337), (6428.584565096202, 64.28584565096202), (5838.325283198934, 58.38325283198934), (6879.267202409801, 68.79267202409801), (8277.251611316577, 82.77251611316576), (10187.852098167346, 101.87852098167346), (8645.21402514527, 86.45214025145269), (6491.250388325175, 64.91250388325174), (5780.397432709811, 57.80397432709811), (6819.052540855137, 68.19052540855137), (8277.048636501786, 82.77048636501786), (10122.691278150181, 101.22691278150181), (8890.323144401991, 88.90323144401991), (6608.710752307299, 66.08710752307299), (5751.624683354894, 57.51624683354894), (6654.802085376308, 66.54802085376308), (8138.975031079451, 81.38975031079451), (10229.294927953382, 102.29294927953383), (9071.490835961622, 90.71490835961622), (6704.117657355551, 67.04117657355552), (5756.425530781211, 57.56425530781211), (6597.799904583444, 65.97799904583444), (8060.798708984137, 80.60798708984137), (10180.124853463218, 101.80124853463218), (9334.79379112981, 93.3479379112981), (6673.91999154999, 66.73919991549991),

(5725.9087631432485, 57.259087631432486), (6608.2466887559185, 66.08246688755918), (7928.693862350634, 79.28693862350634), (10223.901714302963, 102.23901714302963), (9597.679389020976, 95.97679389020976), (6700.04625249896, 67.0004625249896),

(5704.707752937061, 57.04707752937061), (6633.273375530753, 66.33273375530753), (7897.609148829244, 78.97609148829244), (10331.026726925145, 103.31026726925145), (10109.343071458283, 101.09343071458282), (6870.206024959359, 68.70206024959359), (5673.668350094053, 56.73668350094053), (6605.412463635394, 66.05412463635393), (7945.715981448781, 79.45715981448781), (10479.024893627164, 104.79024893627164), (10353.998082006732, 103.53998082006733), (6890.150454337298, 68.90150454337298), (5655.073297360081, 56.55073297360081), (6536.138107441678, 65.36138107441678), (7929.090399519236, 79.29090399519235), (10537.820156187496, 105.37820156187496)]

[[3.4831741260300975, 28.753239144104537, 1.0318474959147808, 0.19347026301106734, 0.43919430652816815], [3.427982465845705, 28.251923505024855, 0.94847689555404968, 0.17469780868317294, 0.43323727718406957], [3.415374585819211, 27.971081193833832, 0.85417011212015548, 0.15268033139060674, 0.4197277221522987], [3.5389499365225765, 28.901749298336977, 0.78615588725462904, 0.13519827652547103, 0.42538560624974497], [3.6309772477644042, 29.453424309006877, 0.73453122971983109, 0.1221259772372613, 0.41972354491893205], [3.743183020439182, 29.852448012991783, 0.68024887180282601, 0.1097476840538283, 0.41228420222435491], [3.4959245674103085, 28.893463980491948, 1.0468919134283066, 0.19659678490712051, 0.43839536288657166], [3.429177247995477, 28.298100477491015, 0.95289804271505285, 0.1755679628577378, 0.4333428611665926], [3.4066319941662537, 27.904763227194916, 0.85818778786195027, 0.15361262037823967, 0.41838833934257447], [3.538907405040399, 28.925530722955532, 0.78910812979700429, 0.1358288543428804, 0.42628926554057256], [3.6353102919263756, 29.514421862110638, 0.73527282699250318, 0.12220115096421391, 0.42053287463494571], [3.741860804619699, 29.871402531327572, 0.6809356838229863, 0.10979518393800218, 0.41214902017063104], [3.5012418863632155, 28.941024551337023, 1.0531639312680494, 0.19787182446112442, 0.43687989849622], [3.4290103137550396, 28.315185072793092, 0.95970834458828169, 0.17708705776026684, 0.43253442006249176], [3.4011743152490426, 27.892108155822413, 0.86435130110111968, 0.15508619266602056, 0.41810071322586684], [3.522571996924112, 28.786430865765212, 0.79349552993813088, 0.13694246128395943, 0.4250456008895559], [3.627575160261172, 29.454080990083742, 0.73814641657333457, 0.12298581190121176, 0.42108929995221056], [3.758194720191165, 29.978446924554124, 0.67903466184844452, 0.1093171624473678, 0.41340029328776484], [3.504956910937762, 28.973025356333011, 1.0575102330472808, 0.1987598864036322, 0.43617896018438018], [3.4309516052904137, 28.340470172798994, 0.96549235629948382, 0.17834968317240174, 0.43256536864281769], [3.3960316029905777, 27.870061400197759, 0.86701036914624341, 0.15570578771701382, 0.4172026826795544], [3.5127187312547115, 28.733231366162503, 0.79561629502817022, 0.13752702712206982, 0.42385204386214215], [3.621012048356008, 29.4379193654432, 0.74147948487344817, 0.12365547303278754, 0.42142396956894501], [3.756589474054299, 29.96689493189665, 0.67820139807689106, 0.10910685948720511, 0.4123885525060389], [3.514131936601219, 29.065405622203983, 1.064845727933655, 0.2002373687726808, 0.43614942909096488], [3.431527636988061, 28.355855625308749, 0.96356039298985907, 0.17784363954715, 0.43312696131376804], [3.3886456874896123, 27.817583146225065, 0.87113202453875482, 0.15663025311724174, 0.41595768973762226], [3.511957950106092, 28.723129059504416, 0.79758572860770927, 0.13806400458517656, 0.4242667594158589], [3.619583430831426, 29.447921840634855, 0.74034868402664045, 0.12330820926920401, 0.42051906419397422], [3.7579507170469286, 29.977374888220197, 0.67836504283797494, 0.10907412985994507, 0.41263720351214961], [3.519766588569577, 29.12867418475258, 1.071653595948719, 0.20154287528023404, 0.43342680216045082], [3.430845471036101, 28.356213936544531, 0.9651385884702619, 0.1781744918741293, 0.43258085145924119], [3.3878326648001447, 27.820849246061655, 0.87024409352352716, 0.1563907119963023, 0.41562599612743822], [3.51538389555857, 28.779699176667613, 0.79918354404843828, 0.1382710613641225, 0.42540307976105052], [3.617944111960284, 29.467528640154281, 0.74435829797111364, 0.12410030258606569, 0.42192081885614452], [3.7646455416698803, 30.023876457287759, 0.67910072571054059, 0.10921427423024442, 0.4140535264499684], [3.5377698437953073, 29.299295322541472, 1.084022888000874, 0.20409434927516934, 0.43477640099553538], [3.4352371309287912, 28.397984052295854, 0.973446692006529, 0.18005239968384854, 0.43317261487689029], [3.3853699445679615, 27.820464038590252, 0.87021257092930315, 0.15632629377000717, 0.41497191952527035], [3.512688100262425, 28.778009427779111, 0.80485946657204066, 0.13958103231077232, 0.42687283206916515], [3.621245899843422, 29.484311882327574, 0.74234847020630912, 0.12359684489629759, 0.42225159664633893], [3.772578692249665, 30.083428685161248, 0.67986333942590493, 0.10936604272187093, 0.41544574150017266], [3.545881254283947, 29.392299100477864, 1.0896515455583222, 0.20512091566684235, 0.43398981025859285], [3.434965089296378, 28.400563232371802, 0.97529358320639081, 0.18047410870378688, 0.43292716754966609], [3.38468141329066, 27.830474848136081, 0.87309326455356773, 0.15692549448461565, 0.41520470912194318], [3.5081877686022955, 28.752308310859853, 0.80502809736503966, 0.13953539861282738, 0.42625163323326365], [3.6233872570640773, 29.499301300121104, 0.74315204995683448, 0.12376062460776366, 0.42286372345624168], [3.775427840620756, 30.129453613363111, 0.67812938713853343, 0.10887152914958359, 0.41471545308116331]]

1. **[180,250]\*[7]**

[(180, 7), (185, 7), (190, 7), (195, 7), (200, 7), (205, 7), (210, 7), (215, 7), (220, 7), (225, 7), (230, 7), (235, 7), (240, 7), (245, 7)]

[(5658.5032662188505, 56.5850326621885), (5666.711843050768, 56.66711843050768), (5634.318350507279, 56.343183505072794), (5648.692939421899, 56.48692939421899), (5629.470391040919, 56.29470391040919), (5633.549763491492, 56.335497634914915), (5639.490355944488, 56.394903559444884), (5662.864983568465, 56.62864983568465), (5689.234685703443, 56.892346857034426), (5674.774184846114, 56.74774184846114), (5678.280328532326, 56.78280328532326), (5688.169662442319, 56.88169662442319), (5694.10223283494, 56.9410223283494), (5705.173926913223, 57.051739269132234)]

[[3.38410910954188, 27.838659397532002, 0.87776964095113241, 0.15797453704560904, 0.4156157893996798], [3.381850583717764, 27.819074111096402, 0.88109255967071998, 0.15879280069115445, 0.41535256797896203], [3.383205893419299, 27.840534488199406, 0.87669511832142832, 0.15765459576424215, 0.41523255332386688], [3.38475994956749, 27.886308545181599, 0.88196164223154949, 0.158763244627484, 0.41627548687704519], [3.383474524440714, 27.867586977418537, 0.87969176720692477, 0.1582971658331835, 0.41567564421716818], [3.3879528903437075, 27.889516063203182, 0.87577204257276753, 0.15738094442531383, 0.41641506972904496], [3.3891428935465795, 27.907471796244252, 0.8769816199604934, 0.15761493818319028, 0.416887027749276], [3.388414220143611, 27.908937137744047, 0.87880329686138481, 0.15801114728607518, 0.41692468612710254], [3.3886862400963333, 27.906611418049046, 0.88000582246484471, 0.15829348008039465, 0.4171604805316006], [3.3886200472031067, 27.901157403714027, 0.87691691132277516, 0.15753813338152742, 0.4168347200853163], [3.3877240546406973, 27.898470110505372, 0.87656396497246203, 0.15739599069454605, 0.41655950184076518], [3.3863085551671186, 27.884465599207953, 0.87686409751212391, 0.15741663221317032, 0.41628055819629262], [3.385641494598592, 27.90326909677853, 0.87720761002615133, 0.15744198769886122, 0.4161134726198481], [3.386302560468489, 27.897246334101133, 0.87923350897346808, 0.15795380869141618, 0.41652021554790453]]

**6. [250,295]\*[7]**

[(250, 7), (255, 7), (260, 7), (265, 7), (270, 7), (275, 7), (280, 7), (285, 7), (290, 7), (295, 7)]

[(5674.355760284216, 56.74355760284216), (5701.298846186127, 57.01298846186127), (5708.074191968701, 57.08074191968701), (5687.943545615073, 56.87943545615073), (5696.739157938087, 56.96739157938087), (5689.0196060792805, 56.8901960607928), (5656.502308893991, 56.56502308893991), (5671.248452622123, 56.71248452622123), (5661.106658356294, 56.611066583562945), (5648.321367050241, 56.48321367050241)]

[[3.385201385221364, 27.893129688324588, 0.87685787962331918, 0.1573343708778637, 0.41597568131722684], [3.389186037658945, 27.925513974660426, 0.87923043929846789, 0.15787671468739367, 0.41740022335423499], [3.389581372732055, 27.926459918043747, 0.88017131990462905, 0.15810902465684046, 0.41762049828746661], [3.386855688268968, 27.924720959243668, 0.88292025512148342, 0.15867969952129918, 0.41719845362341346], [3.3855768610228756, 27.916920326783281, 0.88539749004388735, 0.1592587150221604, 0.4171311554047652], [3.384884784747766, 27.911526441266524, 0.88541223206552178, 0.15924025455959454, 0.41692989656820045], [3.385527418271108, 27.919411300222528, 0.88444421348459368, 0.15894813478709113, 0.41706502122728628], [3.3812407174365124, 27.884073399627297, 0.8871935038811819, 0.1596253510250078, 0.41609344077058241], [3.381602049322428, 27.895540977661671, 0.8882576661150362, 0.1598608879358479, 0.41627636002980217], [3.379107524600728, 27.869103949504915, 0.88833218267972702, 0.15989642477870075, 0.41558095035311893]]

**7. [500,520]\*7**

[(500, 7), (505, 7), (510, 7), (515, 7)]

[(5633.250502459312, 56.33250502459312), (5634.954114206648, 56.349541142066485), (5640.135994341293, 56.40135994341293), (5645.502719248138, 56.45502719248138)]

[[3.3820511565323645, 27.900222800892379, 0.88802199358971645, 0.15949006772156799, 0.41667470376774507], [3.3812548036808017, 27.89426701774801, 0.88799450411464431, 0.15947762161460421, 0.41644229141791589], [3.3815343990717452, 27.89576516768394, 0.88896106688740528, 0.15968842894100882, 0.41659493558882654], [3.3823342926517994, 27.901263623279238, 0.88954045380460112, 0.1598346008037381, 0.41688057438962989]]

**8. [(1000, 7)]**

[(5662.287113475446, 56.62287113475446)]

[[3.3830032656038593, 27.854945122851571, 0.89273710920421079, 0.16047239616311187, 0.41758856635771857]]

**9. [(50, 7)]**

[(9033.955371730059, 90.33955371730059)]

[[3.724817307163331, 30.263988949745887, 0.74832255050794305, 0.1248309318316831, 0.43713208846340812]]