

On Pairs of Rectangles and Armstrong Numbers

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Abstract

This paper concerns with the problem of obtaining pairs of rectangles, where, in each pair, the sum of the areas is represented by an Armstrong number with 3 and 4 digits respectively.

Keywords: Pairs of rectangles, Armstrong number, Primitive rectangle, Non-Primitive rectangle.

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Introduction:

Number is the essence of mathematical calculations. Numbers have varieties of range and richness. Many numbers exhibit fascinating properties, they form sequences, they form patterns and so on [1-9]. A careful observer of patterns may note that there is a one to one correspondence between the numbers and the number of sides of the polygon. In particular, one may refer [10-15].

In this communication, we search for pairs of rectangles where, in each pair, the sum of the areas is represented by an Armstrong number with 3 and 4 digits respectively. The total number of primitive and non-primitive rectangles is also given.

Definition: (Armstrong Number of Order ‘n’)

Let N be an n-digit number represented by

$$N = a_1.a_2.a_3.....a_n$$

If $N = a_1^n + a_2^n + a_3^n + \dots + a_n^n$, then N is said to be an Armstrong number of order n.

In otherwords, A number that is the sum of its own digits each raised to the power of the number of digits.

Method of Analysis:

Let $R_1(x, y)$ and $R_2(X, Y)$ be two distinct rectangles whose corresponding areas are A_1, A_2 .

Consider

$$A_1 + A_2 = \alpha \text{ (Armstrong Number)}$$

That is,

$$xy + XY = \alpha \tag{1}$$

Let q, r, s be three non-zero distinct positive integers and $r > s$.

Introduction of the linear transformations

$$x = s, y = 2q + s, X = r - s, Y = r + s \tag{2}$$

in (1) leads to

$$r^2 = \alpha - 2qs \tag{3}$$

Solving (3) for q, r, s and using (2), the corresponding values of rectangles R_1 and R_2 are obtained and presented in Table:1 below:

Table: 1 Rectangles

Armstrong number	R_1	R_2	Observations		Remarks
			Primitive	Non-Primitive	
153	(1, 33)	(10, 12)	R_1	R_2	Total number of Primitive rectangles =14 Total number of non-Primitive rectangles =16
	(8, 12)	(3, 19)	R_2	R_1	
	(2, 18)	(9, 13)	R_2	R_1	
	(1, 73)	(8, 10)	R_1	R_2	

	(2, 38)	(7, 11)	R_2	R_1	
	(4, 22)	(5, 13)	R_2	R_1	
	(3, 27)	(6, 12)		R_1, R_2	
	(1, 105)	(6, 8)	R_1	R_2	
	(2, 54)	(5, 9)	R_2	R_1	
	(4, 30)	(3, 11)	R_2	R_1	
	(1, 129)	(4, 6)	R_1	R_2	
	(2, 66)	(3, 7)	R_2	R_1	
	(4, 36)	(1, 9)	R_2	R_1	
	(1, 145)	(2, 4)	R_1	R_2	
	(2, 74)	(1, 5)	R_2	R_1	
370	(1, 47)	(17, 19)	R_1, R_2		Total number of Primitive rectangles =28 Total number of non-Primitive rectangles =4
	(1, 115)	(15, 17)	R_1, R_2		
	(3, 41)	(13, 19)	R_1, R_2		
	(1, 175)	(13, 15)	R_1, R_2		
	(3, 61)	(11, 17)	R_1, R_2		
	(1, 227)	(11, 13)	R_1, R_2		
	(1, 271)	(9, 11)	R_1, R_2		
	(5, 59)	(5, 15)	R_1	R_2	
	(9, 39)	(1, 19)	R_2	R_1	
	(3, 93)	(7, 13)	R_2	R_1	
	(1, 307)	(7, 9)	R_1, R_2		
	(3, 105)	(5, 11)	R_2	R_1	
	(1, 335)	(5, 7)	R_1, R_2		
	(1, 355)	(3, 5)	R_1, R_2		
	(3, 121)	(1, 7)	R_1, R_2		
	(1, 367)	(1, 3)	R_1, R_2		
371	(1, 11)	(18, 20)	R_1	R_2	Total number of Primitive rectangles =10 Total number of non-Primitive rectangles =12
	(5, 7)	(14, 24)	R_1	R_2	
	(1, 83)	(16, 18)	R_1	R_2	
	(1, 147)	(14, 16)	R_1	R_2	
	(1, 203)	(12, 14)	R_1	R_2	
	(1, 251)	(10, 12)	R_1	R_2	
	(5, 55)	(6, 16)		R_1, R_2	
	(1, 291)	(8, 10)	R_1	R_2	
	(1, 323)	(6, 8)	R_1	R_2	
	(1, 347)	(4, 6)	R_1	R_2	
	(1, 363)	(2, 4)	R_1	R_2	
407	(1, 47)	(18, 20)	R_1	R_2	Total number of Primitive

	(1, 119)	(16, 18)	R_1	R_2	rectangles =12 Total number of non-Primitive rectangles =12
	(1, 183)	(14, 16)	R_1	R_2	
	(13, 27)	(2, 28)	R_1	R_2	
	(7, 33)	(8, 22)	R_1	R_2	
	(1, 239)	(12, 14)	R_1	R_2	
	(7, 41)	(6, 20)	R_1	R_2	
	(1, 287)	(10, 12)	R_1	R_2	
	(1, 327)	(8, 10)	R_1	R_2	
	(1, 359)	(6, 8)	R_1	R_2	
	(1, 383)	(4, 6)	R_1	R_2	
(1, 399)	(2, 4)	R_1	R_2		
1634	(1, 35)	(39, 41)	R_1, R_2		Total number of Primitive rectangles =61 Total number of non-Primitive rectangles =3
	(17, 19)	(23, 57)	R_1, R_2		
	(1, 191)	(37, 39)	R_1, R_2		
	(5, 43)	(33, 43)	R_1, R_2		
	(19, 29)	(19, 57)	R_1	R_2	
	(1, 339)	(35, 37)	R_1, R_2		
	(1, 479)	(33, 35)	R_1, R_2		
	(1, 611)	(31, 33)	R_1, R_2		
	(5, 127)	(27, 37)	R_1, R_2		
	(1, 735)	(29, 31)	R_1, R_2		
	(1, 851)	(27, 29)	R_1, R_2		
	(5, 175)	(23, 33)	R_2	R_1	
	(17, 67)	(11, 45)	R_1, R_2		
	(25, 59)	(3, 53)	R_1, R_2		
	(1, 959)	(25, 27)	R_1, R_2		
	(1, 1059)	(23, 25)	R_1, R_2		
	(1, 1151)	(21, 23)	R_1, R_2		
	(5, 235)	(17, 27)	R_2	R_1	
	(1, 1235)	(19, 21)	R_1, R_2		
	(1, 1311)	(17, 19)	R_1, R_2		
	(5, 267)	(13, 23)	R_1, R_2		
	(1, 1379)	(15, 17)	R_1, R_2		
	(13, 119)	(3, 29)	R_1, R_2		
	(1, 1439)	(13, 15)	R_1, R_2		
	(1, 1491)	(11, 13)	R_1, R_2		
	(5, 303)	(7, 17)	R_1, R_2		
	(1, 1535)	(9, 11)	R_1, R_2		
	(1, 1571)	(7, 9)	R_1, R_2		

	(5, 319)	(3, 13)	R_1, R_2		
	(1, 1599)	(5, 7)	R_1, R_2		
	(1, 1619)	(3, 5)	R_1, R_2		
	(1, 1631)	(1, 3)	R_1, R_2		
8208	(1, 109)	(89, 91)	R_1, R_2		Total number of Primitive rectangles =143 Total number of non-Primitive rectangles =405
	(54, 56)	(36, 144)		R_1, R_2	
	(2, 56)	(88, 92)		R_1, R_2	
	(27, 31)	(63, 117)	R_1	R_2	
	(9, 21)	(81, 99)		R_1, R_2	
	(6, 24)	(84, 96)		R_1, R_2	
	(3, 39)	(87, 93)		R_1, R_2	
	(18, 24)	(72, 108)		R_1, R_2	
	(1, 465)	(87, 89)	R_1, R_2		
	(2, 234)	(86, 90)		R_1, R_2	
	(58, 66)	(30, 146)		R_1, R_2	
	(4, 120)	(84, 92)		R_1, R_2	
	(29, 45)	(59, 117)	R_1, R_2		
	(8, 66)	(80, 96)		R_1, R_2	
	(1, 813)	(85, 87)	R_1, R_2		
	(2, 408)	(84, 88)		R_1, R_2	
	(29, 57)	(57, 115)	R_1, R_2		
	(14, 72)	(72, 100)		R_1, R_2	
	(7, 123)	(79, 93)	R_1, R_2		
	(58, 72)	(28, 144)		R_1, R_2	
	(1, 1153)	(83, 85)	R_1, R_2		
	(2, 578)	(82, 86)		R_1, R_2	
	(4, 292)	(80, 88)		R_1, R_2	
	(72, 88)	(12, 156)		R_1, R_2	
	(8, 152)	(76, 92)		R_1, R_2	
	(36, 68)	(48, 120)		R_1, R_2	
	(16, 88)	(68, 100)		R_1, R_2	
	(18, 82)	(66, 102)		R_1, R_2	
	(32, 68)	(52, 116)		R_1, R_2	
	(9, 137)	(75, 93)	R_1	R_2	
	(64, 82)	(20, 148)		R_1, R_2	
	(3, 387)	(81, 87)		R_1, R_2	
	(6, 198)	(78, 90)		R_1, R_2	
	(48, 72)	(36, 132)		R_1, R_2	
	(12, 108)	(72, 96)		R_1, R_2	

(1, 1485)	(81, 83)	R_1, R_2	
(2, 744)	(80, 84)		R_1, R_2
(12, 504)	(36, 60)		R_1, R_2
(28, 252)	(16, 72)		R_1, R_2
(53, 81)	(29, 135)	R_1, R_2	
(14, 120)	(68, 96)		R_1, R_2
(7, 219)	(75, 89)	R_1, R_2	
(1, 1809)	(79, 81)	R_1, R_2	
(2, 906)	(78, 82)		R_1, R_2
(4, 456)	(76, 84)		R_1, R_2
(8, 234)	(72, 88)		R_1, R_2
(1, 2125)	(77, 79)	R_1, R_2	
(2, 1064)	(76, 80)		R_1, R_2
(6, 360)	(72, 84)		R_1, R_2
(59, 95)	(19, 137)	R_1, R_2	
(18, 136)	(60, 96)		R_1, R_2
(3, 711)	(75, 81)		R_1, R_2
(9, 245)	(69, 87)	R_1	R_2
(1, 2433)	(75, 77)	R_1, R_2	
(2, 1218)	(74, 78)		R_1, R_2
(4, 612)	(72, 80)		R_1, R_2
(8, 312)	(68, 84)		R_1, R_2
(16, 168)	(60, 92)		R_1, R_2
(38, 102)	(38, 114)		R_1, R_2
(32, 108)	(44, 108)		R_1, R_2
(19, 147)	(57, 95)	R_1	R_2
(64, 102)	(12, 140)		R_1, R_2
(1, 2733)	(73, 75)	R_1, R_2	
(2, 1368)	(72, 76)		R_1, R_2
(1, 3025)	(71, 73)	R_1, R_2	
(2, 1514)	(70, 74)		R_1, R_2
(4, 760)	(68, 76)		R_1, R_2
(8, 386)	(64, 80)		R_1, R_2
(63, 111)	(9, 135)		R_1, R_2
(24, 150)	(48, 96)		R_1, R_2
(21, 165)	(51, 93)		R_1, R_2
(7, 439)	(65, 79)	R_1, R_2	
(27, 139)	(45, 99)	R_1	R_2
(56, 110)	(16, 128)		R_1, R_2

(9, 345)	(63, 81)		R_1, R_2
(3, 1011)	(69, 75)		R_1, R_2
(28, 136)	(44, 100)		R_1, R_2
(54, 110)	(18, 126)		R_1, R_2
(14, 230)	(58, 86)		R_1, R_2
(6, 510)	(66, 78)		R_1, R_2
(12, 264)	(60, 84)		R_1, R_2
(36, 120)	(36, 108)		R_1, R_2
(42, 114)	(30, 114)		R_1, R_2
(18, 186)	(54, 90)		R_1, R_2
(1, 3309)	(69, 71)	R_1, R_2	
(2, 1656)	(68, 72)		R_1, R_2
(1, 3585)	(67, 69)	R_1, R_2	
(2, 1794)	(66, 70)		R_1, R_2
(4, 900)	(64, 72)		R_1, R_2
(8, 456)	(60, 76)		R_1, R_2
(16, 240)	(52, 84)		R_1, R_2
(56, 120)	(12, 124)		R_1, R_2
(32, 144)	(36, 100)		R_1, R_2
(64, 120)	(4, 132)		R_1, R_2
(28, 156)	(40, 96)		R_1, R_2
(14, 270)	(54, 82)		R_1, R_2
(7, 519)	(61, 75)	R_1, R_2	
(1, 3853)	(65, 67)	R_1, R_2	
(2, 1928)	(64, 68)		R_1, R_2
(6, 648)	(60, 72)		R_1, R_2
(18, 232)	(48, 84)		R_1, R_2
(9, 437)	(57, 75)	R_1	R_2
(3, 1287)	(63, 69)		R_1, R_2
(1, 4113)	(63, 65)	R_1, R_2	
(2, 2058)	(62, 66)		R_1, R_2
(4, 1032)	(60, 68)		R_1, R_2
(8, 522)	(56, 72)		R_1, R_2
(1, 4365)	(61, 63)	R_1, R_2	
(2, 2184)	(60, 64)		R_1, R_2
(1, 4609)	(59, 61)	R_1, R_2	
(2, 2306)	(58, 62)		R_1, R_2
(4, 1156)	(56, 64)		R_1, R_2
(8, 584)	(52, 68)		R_1, R_2

(16, 304)	(44, 76)		R_1, R_2
(32, 176)	(28, 92)		R_1, R_2
(36, 164)	(24, 96)		R_1, R_2
(18, 274)	(42, 78)		R_1, R_2
(9, 521)	(51, 69)	R_1	R_2
(3, 1539)	(57, 63)		R_1, R_2
(6, 774)	(54, 66)		R_1, R_2
(12, 396)	(48, 72)		R_1, R_2
(24, 216)	(36, 84)		R_1, R_2
(1, 4845)	(57, 59)	R_1, R_2	
(2, 2424)	(56, 60)		R_1, R_2
(14, 360)	(44, 72)		R_1, R_2
(7, 699)	(51, 65)	R_1, R_2	
(1, 5073)	(55, 57)	R_1, R_2	
(2, 2538)	(54, 58)		R_1, R_2
(4, 1272)	(52, 60)		R_1, R_2
(8, 642)	(48, 64)		R_1, R_2
(1, 5293)	(53, 55)	R_1, R_2	
(2, 2648)	(52, 56)		R_1, R_2
(6, 888)	(48, 60)		R_1, R_2
(18, 312)	(36, 72)		R_1, R_2
(49, 157)	(5, 103)	R_1, R_2	
(7, 763)	(47, 61)	R_2	R_1
(14, 392)	(40, 68)		R_1, R_2
(27, 223)	(27, 81)	R_1	R_2
(9, 597)	(45, 63)		R_1, R_2
(3, 1767)	(51, 57)		R_1, R_2
(42, 168)	(12, 96)		R_1, R_2
(21, 273)	(33, 75)		R_1, R_2
(1, 5505)	(51, 53)	R_1, R_2	
(2, 2754)	(50, 54)		R_1, R_2
(4, 1380)	(48, 56)		R_1, R_2
(8, 696)	(44, 60)		R_1, R_2
(16, 360)	(36, 68)		R_1, R_2
(32, 204)	(20, 84)		R_1, R_2
(43, 171)	(9, 95)	R_1, R_2	
(2, 2856)	(48, 52)		R_1, R_2
(1, 5709)	(49, 51)	R_1, R_2	
(1, 5905)	(47, 49)	R_1, R_2	

(2, 2954)	(46, 50)		R_1, R_2
(4, 1480)	(44, 52)		R_1, R_2
(8, 746)	(40, 56)		R_1, R_2
(24, 270)	(24, 72)		R_1, R_2
(41, 185)	(7, 89)	R_1, R_2	
(9, 665)	(39, 57)	R_1	R_2
(3, 1971)	(45, 51)		R_1, R_2
(18, 346)	(30, 66)		R_1, R_2
(36, 200)	(12, 84)		R_1, R_2
(6, 990)	(42, 54)		R_1, R_2
(1, 6093)	(45, 47)	R_1, R_2	
(2, 3048)	(44, 48)		R_1, R_2
(1, 6273)	(43, 45)	R_1, R_2	
(2, 3138)	(42, 46)		R_1, R_2
(4, 1572)	(40, 48)		R_1, R_2
(8, 792)	(36, 52)		R_1, R_2
(16, 408)	(28, 60)		R_1, R_2
(32, 228)	(12, 76)		R_1, R_2
(7, 903)	(37, 51)	R_2	R_1
(14, 462)	(30, 58)		R_1, R_2
(1, 6445)	(41, 43)	R_1, R_2	
(2, 3224)	(40, 44)		R_1, R_2
(6, 1080)	(36, 48)		R_1, R_2
(18, 376)	(24, 60)		R_1, R_2
(9, 725)	(33, 51)	R_1	R_2
(3, 2151)	(39, 45)		R_1, R_2
(1, 6609)	(39, 41)	R_1, R_2	
(2, 3306)	(38, 42)		R_1, R_2
(4, 1656)	(36, 44)		R_1, R_2
(8, 834)	(32, 48)		R_1, R_2
(7, 951)	(33, 47)	R_1, R_2	
(14, 486)	(26, 54)		R_1, R_2
(28, 264)	(12, 68)		R_1, R_2
(1, 6765)	(37, 39)	R_1, R_2	
(2, 3384)	(36, 40)		R_1, R_2
(19, 375)	(19, 57)	R_1	R_2
(1, 6913)	(35, 37)	R_1, R_2	
(2, 3458)	(34, 38)		R_1, R_2
(4, 1732)	(32, 40)		R_1, R_2

(8, 872)	(28, 44)		R_1, R_2
(16, 448)	(20, 52)		R_1, R_2
(32, 248)	(4, 68)		R_1, R_2
(27, 283)	(9, 63)	R_1	R_2
(9, 777)	(27, 45)		R_1, R_2
(3, 2307)	(33, 39)		R_1, R_2
(6, 1158)	(30, 42)		R_1, R_2
(18, 402)	(18, 54)		R_1, R_2
(12, 588)	(24, 48)		R_1, R_2
(24, 312)	(12, 60)		R_1, R_2
(1, 7053)	(33, 35)	R_1, R_2	
(2, 3528)	(32, 36)		R_1, R_2
(1, 7185)	(31, 33)	R_1, R_2	
(2, 3594)	(30, 34)		R_1, R_2
(4, 1800)	(28, 36)		R_1, R_2
(8, 906)	(24, 40)		R_1, R_2
(1, 7309)	(29, 31)	R_1, R_2	
(2, 3656)	(28, 32)		R_1, R_2
(6, 1224)	(24, 36)		R_1, R_2
(18, 424)	(12, 48)		R_1, R_2
(29, 281)	(1, 59)	R_1, R_2	
(7, 1051)	(23, 37)	R_1, R_2	
(3, 2439)	(27, 33)		R_1, R_2
(21, 369)	(9, 51)		R_1, R_2
(14, 536)	(16, 44)		R_1, R_2
(9, 821)	(21, 39)	R_1	R_2
(1, 7425)	(27, 29)	R_1, R_2	
(2, 3714)	(26, 30)		R_1, R_2
(4, 1860)	(24, 32)		R_1, R_2
(8, 936)	(20, 36)		R_1, R_2
(16, 480)	(12, 44)		R_1, R_2
(1, 7533)	(25, 27)	R_1, R_2	
(2, 3768)	(24, 28)		R_1, R_2
(14, 552)	(12, 40)		R_1, R_2
(7, 1083)	(19, 33)	R_1, R_2	
(1, 7633)	(23, 25)	R_1, R_2	
(2, 3818)	(22, 26)		R_1, R_2
(4, 1912)	(20, 28)		R_1, R_2
(8, 962)	(16, 32)		R_1, R_2

(9, 857)	(15, 33)	R_1	R_2
(3, 2547)	(21, 27)		R_1, R_2
(6, 1278)	(18, 30)		R_1, R_2
(18, 442)	(6, 42)		R_1, R_2
(12, 648)	(12, 36)		R_1, R_2
(1, 7725)	(21, 23)	R_1, R_2	
(2, 3864)	(20, 24)		R_1, R_2
(1, 7809)	(19, 21)	R_1, R_2	
(2, 3906)	(18, 22)		R_1, R_2
(4, 1956)	(16, 24)		R_1, R_2
(8, 984)	(12, 28)		R_1, R_2
(16, 504)	(4, 36)		R_1, R_2
(1, 7885)	(17, 19)	R_1, R_2	
(2, 3944)	(16, 20)		R_1, R_2
(6, 1320)	(12, 24)		R_1, R_2
(9, 885)	(9, 27)		R_1, R_2
(3, 2631)	(15, 21)		R_1, R_2
(1, 7953)	(15, 17)	R_1, R_2	
(2, 3978)	(14, 18)		R_1, R_2
(4, 1992)	(12, 20)		R_1, R_2
(8, 1002)	(8, 24)		R_1, R_2
(7, 1143)	(9, 23)	R_1, R_2	
(14, 582)	(2, 30)		R_1, R_2
(1, 8013)	(13, 15)	R_1, R_2	
(2, 4008)	(12, 16)		R_1, R_2
(1, 8065)	(11, 13)	R_1, R_2	
(2, 4034)	(10, 14)		R_1, R_2
(4, 2020)	(8, 16)		R_1, R_2
(8, 1016)	(4, 20)		R_1, R_2
(7, 1159)	(5, 19)	R_1, R_2	
(9, 905)	(3, 21)	R_1	R_2
(3, 2691)	(9, 15)		R_1, R_2
(6, 1350)	(6, 18)		R_1, R_2
(1, 8109)	(9, 11)	R_1, R_2	
(2, 4056)	(8, 12)		R_1, R_2
(1, 8145)	(7, 9)	R_1, R_2	
(2, 4074)	(6, 10)		R_1, R_2
(4, 2040)	(4, 12)		R_1, R_2
(1, 8173)	(5, 7)	R_1, R_2	

	(2, 4088)	(4, 8)		R_1, R_2	
	(3, 2727)	(3, 9)		R_1, R_2	
	(1, 8193)	(3, 5)	R_1, R_2		
	(2, 4098)	(2, 6)		R_1, R_2	
	(1, 8205)	(1, 3)	R_1, R_2		
9474	(1, 259)	(95, 97)	R_1, R_2		Total number of Primitive rectangles =203 Total number of non-Primitive rectangles =33
	(43, 49)	(53, 139)	R_1, R_2		
	(3, 89)	(93, 99)	R_1	R_2	
	(1, 639)	(93, 95)	R_1, R_2		
	(29, 51)	(65, 123)	R_1, R_2		
	(11, 69)	(83, 105)	R_1, R_2		
	(1, 1011)	(91, 93)	R_1, R_2		
	(5, 207)	(87, 97)	R_1, R_2		
	(1, 1375)	(89, 91)	R_1, R_2		
	(3, 461)	(87, 93)	R_1	R_2	
	(1, 1731)	(87, 89)	R_1, R_2		
	(5, 351)	(83, 93)	R_1, R_2		
	(1, 2079)	(85, 87)	R_1, R_2		
	(1, 2419)	(83, 85)	R_1, R_2		
	(3, 809)	(81, 87)	R_1	R_2	
	(31, 109)	(53, 115)	R_1, R_2		
	(39, 101)	(45, 123)	R_1	R_2	
	(13, 199)	(71, 97)	R_1, R_2		
	(1, 2751)	(81, 83)	R_1, R_2		
	(5, 555)	(77, 87)	R_2	R_1	
	(55, 105)	(27, 137)	R_2	R_1	
	(25, 135)	(57, 107)	R_2	R_1	
	(11, 261)	(71, 93)	R_1, R_2		
	(1, 3075)	(79, 81)	R_1, R_2		
	(53, 111)	(27, 133)	R_1, R_2		
	(29, 135)	(51, 109)	R_1, R_2		
	(1, 3391)	(77, 79)	R_1, R_2		
	(3, 1133)	(75, 81)	R_1	R_2	
	(5, 683)	(73, 83)	R_1, R_2		
	(15, 241)	(63, 93)	R_1	R_2	
	(1, 3699)	(75, 77)	R_1, R_2		
	(1, 3999)	(73, 75)	R_1, R_2		
	(1, 4291)	(71, 73)	R_1, R_2		
(5, 863)	(67, 77)	R_1, R_2			

(15, 301)	(57, 87)	R_1	R_2
(39, 149)	(33, 111)	R_1	R_2
(55, 133)	(17, 127)	R_1, R_2	
(33, 163)	(39, 105)	R_1	R_2
(65, 131)	(7, 137)	R_1, R_2	
(13, 343)	(59, 85)	R_1, R_2	
(11, 401)	(61, 83)	R_1, R_2	
(3, 1433)	(69, 75)	R_1	R_2
(1, 4575)	(69, 71)	R_1, R_2	
(1, 4851)	(67, 69)	R_1, R_2	
(5, 975)	(63, 73)	R_2	R_1
(25, 219)	(43, 93)	R_1, R_2	
(1, 5119)	(65, 67)	R_1, R_2	
(3, 1709)	(63, 69)	R_1	R_2
(1, 5379)	(63, 65)	R_1, R_2	
(1, 5631)	(61, 63)	R_1, R_2	
(5, 1131)	(57, 67)	R_1, R_2	
(1, 5875)	(59, 61)	R_1, R_2	
(3, 1961)	(57, 63)	R_1	R_2
(11, 545)	(49, 71)	R_1, R_2	
(33, 211)	(27, 93)	R_1	R_2
(1, 6111)	(57, 59)	R_1, R_2	
(5, 1227)	(53, 63)	R_1, R_2	
(13, 483)	(45, 71)	R_1, R_2	
(47, 177)	(11, 105)	R_1, R_2	
(1, 6339)	(55, 57)	R_1, R_2	
(1, 6559)	(53, 55)	R_1, R_2	
(3, 2189)	(51, 57)	R_1	R_2
(1, 6771)	(51, 53)	R_1, R_2	
(5, 1359)	(47, 57)	R_1, R_2	
(1, 6975)	(49, 51)	R_1, R_2	
(11, 645)	(39, 61)	R_1, R_2	
(1, 7171)	(47, 49)	R_1, R_2	
(5, 1439)	(43, 53)	R_1, R_2	
(3, 2393)	(45, 51)	R_1	R_2
(15, 493)	(33, 63)	R_1	R_2
(1, 7359)	(45, 47)	R_1, R_2	
(13, 579)	(33, 59)	R_1, R_2	
(1, 7539)	(43, 45)	R_1, R_2	

(1, 7711)	(41, 43)	R_1, R_2	
(5, 1547)	(37, 47)	R_1, R_2	
(3, 2573)	(39, 45)	R_1	R_2
(15, 529)	(27, 57)	R_1	R_2
(1, 7875)	(39, 41)	R_1, R_2	
(31, 285)	(9, 71)	R_1, R_2	
(1, 8031)	(37, 39)	R_1, R_2	
(5, 1611)	(33, 43)	R_1, R_2	
(11, 741)	(27, 49)	R_1, R_2	
(1, 8179)	(35, 37)	R_1, R_2	
(3, 2729)	(33, 39)	R_1	R_2
(29, 311)	(7, 65)	R_1, R_2	
(1, 8319)	(33, 35)	R_1, R_2	
(1, 8451)	(31, 33)	R_1, R_2	
(5, 1695)	(27, 37)	R_2	R_1
(13, 663)	(19, 45)	R_2	R_1
(1, 8575)	(29, 31)	R_1, R_2	
(3, 2861)	(27, 33)	R_1	R_2
(1, 8691)	(27, 29)	R_1, R_2	
(5, 1743)	(23, 33)	R_1, R_2	
(11, 801)	(17, 39)	R_1, R_2	
(1, 8799)	(25, 27)	R_1, R_2	
(1, 8899)	(23, 25)	R_1, R_2	
(3, 2969)	(21, 27)	R_1	R_2
(1, 8991)	(21, 23)	R_1, R_2	
(5, 1803)	(17, 27)	R_1, R_2	
(1, 9075)	(19, 21)	R_1, R_2	
(13, 711)	(7, 33)	R_1, R_2	
(1, 9151)	(17, 19)	R_1, R_2	
(5, 1835)	(13, 23)	R_2	R_1
(3, 3053)	(15, 21)	R_1	R_2
(15, 625)	(3, 33)		R_1, R_2
(1, 9219)	(15, 17)	R_1, R_2	
(11, 849)	(5, 27)	R_1, R_2	
(1, 9279)	(13, 15)	R_1, R_2	
(1, 9331)	(11, 13)	R_1, R_2	
(5, 1871)	(7, 17)	R_1, R_2	
(3, 3113)	(9, 15)	R_1	R_2
(1, 9375)	(9, 11)	R_1, R_2	

	(1, 9411)	(7, 9)	R_1, R_2	
	(5, 1887)	(3, 13)	R_1, R_2	
	(1, 9439)	(5, 7)	R_1, R_2	
	(3, 3149)	(3, 9)	R_1	R_2
	(1, 9459)	(3, 5)	R_1, R_2	
	(1, 9471)	(1, 3)	R_1, R_2	

Conclusion:

In this paper, an attempt has been made to obtain pairs of rectangles such that, in each pair, the sum of their areas is represented by Armstrong number. The readers of this paper may search for pairs of rectangles other than the pairs of rectangles presented above for each Armstrong number.

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