

《通往真理的无数个猜想》 In endless flow of absolute truth, there are innumerable relative conjecture.

ln_K

The Ramanujan Machine is an algorithmic approach to discover new mathematical conjectures. For the time being, the project is focused in number theory, specifically on finding formulas relating fundamental constants like pi, e, and the Riemann zeta function values to various continued fractions.

For more information, please go to RamanujanMachine.com.

The following formula is a conjecture about pi generated by the Ramanujan machine.

$$\frac{45}{3 + 8 \cdot \pi} = 15 - \frac{18}{24 - \frac{126}{33 - \frac{243}{42 - \frac{396}{51 - \frac{585}{\ddots}}}}}$$

($a(n) = 9 \cdot n + 15, b(n) = -18 \cdot n - 27 \cdot n$)

$$9 = \frac{3 \cdot \pi}{81} + 3 - \frac{18}{18 - \frac{2}{27 - \frac{180}{36 - \frac{315}{45 - \frac{486}{\ddots}}}}}$$

($a(n) = 9 \cdot n + 9, b(n) = -18 \cdot n - 9 \cdot n + 9$)

$$\frac{\quad}{3 - 10 \cdot \pi} = 12 - \frac{\quad}{21 - \frac{90}{\frac{189}{30 - \frac{324}{39 - \frac{495}{48 - \frac{\dots}{\left(\begin{array}{c} 2 \\ a(n) = 9 \cdot n + 12, b(n) = -18 \cdot n - 9 \cdot n \end{array} \right)}}}}$$

$$\frac{3 \cdot \pi}{4 - \pi} = 12 - \frac{18}{21 - \frac{81}{\frac{180}{30 - \frac{315}{39 - \frac{486}{48 - \frac{\dots}{\left(\begin{array}{c} 2 \\ a(n) = 9 \cdot n + 12, b(n) = -18 \cdot n - 9 \cdot n + 9 \end{array} \right)}}}}$$

$$\frac{27}{5 - 16 \cdot \pi} = 15 - \frac{4}{24 - \frac{90}{\frac{189}{33 - \frac{324}{42 - \frac{495}{51 - \frac{\dots}{\left(\begin{array}{c} 2 \\ a(n) = 9 \cdot n + 15, b(n) = -18 \cdot n - 9 \cdot n \end{array} \right)}}}}$$

$$\frac{9 + 12 \cdot \pi}{6 - 20 \cdot \pi} = 15 - \frac{18}{81}$$

$$24 - \frac{\quad}{\quad}$$

$$180$$

$$33 - \frac{\quad}{\quad}$$

$$315$$

$$42 - \frac{\quad}{\quad}$$

$$486$$

$$51 - \frac{\quad}{\quad}$$

..

$$\left(\frac{\quad}{\quad} \right) \quad \left(\frac{\quad}{\quad} \right)$$

$$(a(n) = 9 \cdot n + 15, b(n) = -18 \cdot n^2 - 9 \cdot n + 9)$$

$$- = 3 - \frac{\frac{9}{\pi} \quad \frac{6}{54}}{\quad}$$

$$12 - \frac{\quad}{\quad}$$

$$135$$

$$21 - \frac{\quad}{\quad}$$

$$252$$

$$30 - \frac{\quad}{\quad}$$

$$405$$

$$39 - \frac{\quad}{\quad}$$

..

$$\left(\frac{\quad}{\quad} \right) \quad \left(\frac{\quad}{\quad} \right)$$

$$(a(n) = 9 \cdot n + 3, b(n) = -18 \cdot n^2 + 9 \cdot n)$$

$$\frac{\quad}{\quad} = 6 - \frac{\frac{9}{2-\pi} \quad \frac{6}{54}}{\quad}$$

$$15 - \frac{\quad}{\quad}$$

$$135$$

$$24 - \frac{\quad}{\quad}$$

$$252$$

$$33 - \frac{\quad}{\quad}$$

$$405$$

$$42 - \frac{\quad}{\quad}$$

..

$$\left(\frac{\quad}{\quad} \right) \quad \left(\frac{\quad}{\quad} \right)$$

$$(a(n) = 9 \cdot n + 6, b(n) = -18 \cdot n^2 + 9 \cdot n)$$

$$\frac{\quad}{\quad} = 9 - \frac{\frac{9}{3+8\pi} \quad \frac{12}{54}}{\quad}$$

$$18 - \frac{\quad}{\quad}$$

$$27 - \frac{135}{}$$

$$36 - \frac{252}{}$$

$$45 - \frac{405}{}$$

$$\left(\begin{array}{c} \\ \end{array} \right) \\ \left(a(n) = 9 \cdot n + 9, b(n) = -18 \cdot n^2 + 9 \cdot n \right)$$

$$9 = \frac{9 \cdot \pi}{27} + 3 + \frac{18}{4}$$

$$18 - \frac{108}{}$$

$$36 - \frac{225}{}$$

$$45 - \frac{378}{}$$

$$\left(\begin{array}{c} \\ \end{array} \right) \\ \left(a(n) = 9 \cdot n + 9, b(n) = -18 \cdot n^2 + 9 \cdot n + 27 \right)$$

$$\frac{9}{2 + \pi} = \frac{6}{18}$$

$$9 - \frac{81}{}$$

$$18 - \frac{180}{}$$

$$27 - \frac{315}{}$$

$$36 - \frac{}{}$$

$$\left(\begin{array}{c} \\ \end{array} \right) \\ \left(a(n) = 9 \cdot n, b(n) = -18 \cdot n^2 + 27 \cdot n \right)$$

$$\frac{9}{\pi} = 3 + \frac{12}{18}$$

$$12 - \frac{81}{}$$

$$21 - \frac{}{}$$

$$\left(\begin{array}{c} 180 \\ 30 - \frac{\quad}{\quad} \\ 315 \\ 39 - \frac{\quad}{\quad} \\ \dots \\ 2 \end{array} \right)$$

$$(a(n) = 9 \cdot n + 3, b(n) = -18 \cdot n + 27 \cdot n)$$

$$\frac{6 \cdot \pi}{3 + 8 \cdot \pi} = 16 - \frac{48}{100}$$

$$22 - \frac{168}{252}$$

$$34 - \frac{352}{40}$$

$$\left(\begin{array}{c} 2 \\ \dots \\ 2 \end{array} \right)$$

$$(a(n) = 6 \cdot n + 16, b(n) = -8 \cdot n - 28 \cdot n - 12)$$

$$\frac{2 - \pi}{3 - \pi} = 10 - \frac{24}{60}$$

$$16 - \frac{112}{180}$$

$$22 - \frac{264}{34}$$

$$\left(\begin{array}{c} 2 \\ \dots \\ 2 \end{array} \right)$$

$$(a(n) = 6 \cdot n + 10, b(n) = -8 \cdot n - 12 \cdot n - 4)$$

$$\frac{20}{3 + 8 \cdot \pi} = 10 - \frac{12}{56}$$

$$16 - \frac{108}{176}$$

$$28 - \frac{\quad}{\quad}$$

$$260$$

$$34 - \frac{\quad}{\quad}$$

$$\dots$$

$$\left(\frac{\quad}{\quad} \right)^2$$

$$(a(n) = 6 \cdot n + 10, b(n) = -8 \cdot n - 12 \cdot n)$$

$$4 \cdot \pi + 12$$

$$16$$

$$\frac{\quad}{\quad} = 10 - \frac{\quad}{\quad}$$

$$\pi$$

$$48$$

$$16 - \frac{\quad}{\quad}$$

$$100$$

$$22 - \frac{\quad}{\quad}$$

$$168$$

$$28 - \frac{\quad}{\quad}$$

$$252$$

$$34 - \frac{\quad}{\quad}$$

$$\dots$$

$$\left(\frac{\quad}{\quad} \right)^2$$

$$(a(n) = 6 \cdot n + 10, b(n) = -8 \cdot n - 12 \cdot n + 8)$$

$$36$$

$$8$$

$$\frac{\quad}{\quad} = 12 - \frac{\quad}{\quad}$$

$$4 - \pi$$

$$80$$

$$18 - \frac{\quad}{\quad}$$

$$140$$

$$24 - \frac{\quad}{\quad}$$

$$216$$

$$30 - \frac{\quad}{\quad}$$

$$308$$

$$36 - \frac{\quad}{\quad}$$

$$\dots$$

$$\left(\frac{\quad}{\quad} \right)^2$$

$$(a(n) = 6 \cdot n + 12, b(n) = -8 \cdot n - 20 \cdot n - 8)$$

$$12$$

$$16$$

$$\frac{\quad}{\quad} = 12 - \frac{\quad}{\quad}$$

$$3 + 8 \cdot \pi$$

$$48$$

$$18 - \frac{\quad}{\quad}$$

$$100$$

$$24 - \frac{\quad}{\quad}$$

$$168$$

$$30 - \frac{\quad}{\quad}$$

$$252$$

$$\left(\begin{array}{c} 36 - \frac{\quad}{\quad} \\ \vdots \\ 2 \end{array} \right) \\ (a(n) = 6 \cdot n + 12, b(n) = -8 \cdot n^2 - 12 \cdot n + 8)$$

$$\frac{4 - 16 \cdot \pi}{5 - 16 \cdot \pi} = 14 - \frac{36}{80} \\ 20 - \frac{140}{26 - \frac{216}{32 - \frac{308}{38 - \frac{\quad}{\quad}}}}$$

$$\left(\begin{array}{c} \vdots \\ 2 \end{array} \right) \\ (a(n) = 6 \cdot n + 14, b(n) = -8 \cdot n^2 - 20 \cdot n - 8)$$

$$- = 2 - \frac{4}{\pi} - \frac{4}{24} \\ 8 - \frac{60}{14 - \frac{112}{20 - \frac{180}{26 - \frac{\quad}{\quad}}}}$$

$$\left(\begin{array}{c} \vdots \\ 2 \end{array} \right) \\ (a(n) = 6 \cdot n + 2, b(n) = -8 \cdot n^2 + 4 \cdot n)$$

$$\frac{3 \cdot \pi + 8}{3 + \pi} = 2 + \frac{10}{12} \\ 8 - \frac{48}{14 - \frac{100}{20 - \frac{168}{26 - \frac{\quad}{\quad}}}}$$

$$\left(\begin{array}{c} \dots \\ 2 \end{array} \right)$$

$$(a(n) = 6 \cdot n + 2, b(n) = -8 \cdot n + 4 \cdot n + 12)$$

$$\frac{4}{2 - \pi} = 4 - \frac{4}{10 - \frac{24}{16 - \frac{60}{22 - \frac{112}{28 - \frac{180}{28 - \dots}}}}}$$

$$\left(\begin{array}{c} \dots \\ 2 \end{array} \right)$$

$$(a(n) = 6 \cdot n + 4, b(n) = -8 \cdot n + 4 \cdot n)$$

$$\frac{6 + 16 \cdot \pi}{\pi + 12} = 4 + \frac{8}{10 - \frac{4}{16 - \frac{48}{22 - \frac{100}{28 - \frac{168}{28 - \dots}}}}}$$

$$\left(\begin{array}{c} \dots \\ 2 \end{array} \right)$$

$$(a(n) = 6 \cdot n + 4, b(n) = -8 \cdot n + 4 \cdot n + 12)$$

$$\frac{12}{4 - \pi} = 6 - \frac{4}{12 - \frac{40}{18 - \frac{84}{24 - \frac{144}{30 - \frac{220}{30 - \dots}}}}}$$

$$\left(\begin{array}{c} \dots \\ 2 \end{array} \right)$$

$$\left(a(n) = 6 \cdot n + 6, b(n) = - 8 \cdot n - 4 \cdot n\right)$$

$$2 + \pi = 6 - \frac{8}{36}$$

$$12 - \frac{80}{140}$$

$$18 - \frac{216}{30}$$

$$24 - \frac{216}{30}$$

$$30 - \frac{216}{30}$$

$$\left(a(n) = 6 \cdot n + 6, b(n) = - 8 \cdot n - 4 \cdot n + 4\right)$$

$$\frac{4}{3 + 8 \cdot \pi} = 6 - \frac{8}{24}$$

$$12 - \frac{60}{112}$$

$$18 - \frac{112}{180}$$

$$24 - \frac{180}{30}$$

$$30 - \frac{180}{30}$$

$$\left(a(n) = 6 \cdot n + 6, b(n) = - 8 \cdot n + 4 \cdot n\right)$$

$$6 = \frac{3 \cdot \pi}{12} + 2 + \frac{8}{2}$$

$$12 - \frac{48}{100}$$

$$18 - \frac{100}{168}$$

$$24 - \frac{168}{30}$$

$$30 - \frac{168}{30}$$

$$\left(a(n) = 6 \cdot n + 6, b(n) = - 8 \cdot n + 4 \cdot n + 12\right)$$

$$(\quad \quad \quad 2 \quad \quad)$$

$$(a(n) = 6 \cdot n + 10, b(n) = -8 \cdot n - 4 \cdot n + 4)$$

$$\left(\begin{array}{c} 2 \\ a(n) = 6 \cdot n - 4, b(n) = -8 \cdot n + 20 \cdot n \end{array} \right)$$

$$\left(\begin{array}{c} 2 \\ a(n) = 6 \cdot n - 2, b(n) = -8 \cdot n + 20 \cdot n \end{array} \right)$$

$$6 - \frac{2 + \pi}{36} = 12 - \frac{8}{80} = 18 - \frac{140}{24}$$

$$\left(\begin{matrix} 2 \\ a(n) = 6 \cdot n, b(n) = -8 \cdot n + 12 \cdot n \end{matrix} \right)$$

$$- = 2 + \frac{4}{\pi} = 8 - \frac{8}{36} = 14 - \frac{80}{20} = 26 - \frac{140}{26}$$

$$\left(\begin{matrix} 2 \\ a(n) = 6 \cdot n + 2, b(n) = -8 \cdot n + 12 \cdot n \end{matrix} \right)$$

$$6 = \frac{15 \cdot \pi}{12} + 2 + \frac{24}{8} = 12 + \frac{16}{18} = 24 - \frac{60}{120} = 30 - \frac{120}{30}$$

$$\left(\begin{matrix} 2 \\ a(n) = 6 \cdot n + 6, b(n) = -8 \cdot n + 12 \cdot n + 20 \end{matrix} \right)$$

$$\frac{3}{4 - \pi} = 3 - \frac{2}{10} = 6 - \frac{10}{6}$$

$$\left(\begin{array}{c} 21 \\ 9 - \frac{\quad}{36} \\ 12 - \frac{\quad}{55} \\ 15 - \frac{\quad}{\ddots} \end{array} \right)$$

$$(a(n) = 3 \cdot n + 3, b(n) = -2 \cdot n - n)$$

$$3 = - + 1 - \frac{\pi \quad 2}{9 \quad 2}$$

$$6 - \frac{\quad}{20}$$

$$9 - \frac{\quad}{35}$$

$$12 - \frac{\quad}{54}$$

$$15 - \frac{\quad}{\ddots}$$

$$\left(\begin{array}{c} 2 \\ a(n) = 3 \cdot n + 3, b(n) = -2 \cdot n - n + 1 \end{array} \right)$$

$$\frac{\quad}{3 - 10 \cdot \pi} = 4 - \frac{3 \quad 2}{\quad 10}$$

$$7 - \frac{\quad}{21}$$

$$10 - \frac{\quad}{36}$$

$$13 - \frac{\quad}{55}$$

$$16 - \frac{\quad}{\ddots}$$

$$\left(\begin{array}{c} 2 \\ a(n) = 3 \cdot n + 4, b(n) = -2 \cdot n - n \end{array} \right)$$

$$\frac{\quad}{4 - \pi} = 4 - \frac{\pi \quad 2}{\quad 9}$$

$$7 - \frac{\quad}{20}$$

$$10 - \frac{\quad}{\quad}$$

$$35$$

$$13 - \frac{\quad}{\quad}$$

$$54$$

$$16 - \frac{\quad}{\quad}$$

$$\dots$$

$$\left(\begin{array}{c} 2 \\ a(n) = 3 \cdot n + 4, b(n) = -2 \cdot n - n + 1 \end{array} \right)$$

$$2 - \pi$$

$$6$$

$$\frac{\quad}{\quad} = 5 - \frac{\quad}{\quad}$$

$$2 + 6 \cdot \pi$$

$$15$$

$$8 - \frac{\quad}{\quad}$$

$$28$$

$$11 - \frac{\quad}{\quad}$$

$$45$$

$$14 - \frac{\quad}{\quad}$$

$$66$$

$$17 - \frac{\quad}{\quad}$$

$$\dots$$

$$\left(\begin{array}{c} 2 \\ a(n) = 3 \cdot n + 5, b(n) = -2 \cdot n - 3 \cdot n - 1 \end{array} \right)$$

$$5$$

$$6$$

$$\frac{\quad}{\quad} = 5 - \frac{\quad}{\quad}$$

$$3 + 8 \cdot \pi$$

$$14$$

$$8 - \frac{\quad}{\quad}$$

$$27$$

$$11 - \frac{\quad}{\quad}$$

$$44$$

$$14 - \frac{\quad}{\quad}$$

$$65$$

$$17 - \frac{\quad}{\quad}$$

$$\dots$$

$$\left(\begin{array}{c} 2 \\ a(n) = 3 \cdot n + 5, b(n) = -2 \cdot n - 3 \cdot n \end{array} \right)$$

$$2 \cdot \pi + 3$$

$$8$$

$$\frac{\quad}{\quad} = 5 - \frac{\quad}{\quad}$$

$$\pi$$

$$12$$

$$8 - \frac{\quad}{\quad}$$

$$25$$

$$11 - \frac{\quad}{\quad}$$

$$42$$

$$\left(\begin{array}{c} 14 - \frac{\quad}{63} \\ 17 - \frac{\quad}{\quad} \\ \dots \\ 2 \end{array} \right)$$

$$(a(n) = 3 \cdot n + 5, b(n) = -2 \cdot n - 3 \cdot n + 2)$$

$$\frac{3 + 4 \cdot \pi}{6 - 20 \cdot \pi} = 5 - \frac{2}{9}$$

$$8 - \frac{\quad}{20}$$

$$11 - \frac{\quad}{35}$$

$$14 - \frac{\quad}{54}$$

$$17 - \frac{\quad}{\quad}$$

$$\dots$$

$$\left(\begin{array}{c} 2 \end{array} \right)$$

$$(a(n) = 3 \cdot n + 5, b(n) = -2 \cdot n - n + 1)$$

$$\frac{3 - 12 \cdot \pi}{3 - 10 \cdot \pi} = 6 - \frac{10}{21}$$

$$9 - \frac{\quad}{36}$$

$$12 - \frac{\quad}{55}$$

$$15 - \frac{\quad}{78}$$

$$18 - \frac{\quad}{\quad}$$

$$\dots$$

$$\left(\begin{array}{c} 2 \end{array} \right)$$

$$(a(n) = 3 \cdot n + 6, b(n) = -2 \cdot n - 5 \cdot n - 3)$$

$$\frac{9}{4 - \pi} = 6 - \frac{4}{20}$$

$$9 - \frac{\quad}{35}$$

$$12 - \frac{\quad}{54}$$

$$15 - \frac{\quad}{\quad}$$

$$18 - \frac{77}{\dots}$$

$$\left(\begin{array}{c} 2 \\ a(n) = 3 \cdot n + 6, b(n) = -2 \cdot n - 5 \cdot n - 2 \end{array} \right)$$

$$\frac{3}{3 + 8 \cdot \pi} = 6 - \frac{8}{9 - \frac{12}{25}}$$

$$12 - \frac{25}{42} = 15 - \frac{63}{18 - \frac{42}{63}}$$

$$\left(\begin{array}{c} 2 \\ a(n) = 3 \cdot n + 6, b(n) = -2 \cdot n - 3 \cdot n + 2 \end{array} \right)$$

$$\frac{2 - 8 \cdot \pi}{5 - 16 \cdot \pi} = 7 - \frac{9}{10 - \frac{20}{35}}$$

$$13 - \frac{35}{54} = 16 - \frac{77}{19 - \frac{54}{77}}$$

$$\left(\begin{array}{c} 2 \\ a(n) = 3 \cdot n + 7, b(n) = -2 \cdot n - 5 \cdot n - 2 \end{array} \right)$$

$$\frac{3 \cdot \pi}{3 + 8 \cdot \pi} = 8 - \frac{12}{11 - \frac{25}{42}}$$

$$14 - \frac{42}{63} = 17 - \frac{88}{20 - \frac{63}{88}}$$

$$\left(\begin{array}{c} \dots \\ 2 \end{array} \right)$$

$$(a(n) = 3 \cdot n + 8, b(n) = -2 \cdot n^2 - 7 \cdot n - 3)$$

$$\frac{\frac{3}{3 - 10 \cdot \pi}}{1 + \frac{\frac{2}{2}}{4 - \frac{3}{12} - \frac{7}{25} - \frac{10}{\dots}}}$$

$$\left(\begin{array}{c} \dots \\ 2 \end{array} \right)$$

$$(a(n) = 3 \cdot n - 2, b(n) = -2 \cdot n^2 + 5 \cdot n)$$

$$\frac{\frac{3}{3 + 8 \cdot \pi}}{2 + \frac{\frac{4}{2}}{5 - \frac{3}{12} - \frac{8}{25} - \frac{11}{\dots}}}$$

$$\left(\begin{array}{c} \dots \\ 2 \end{array} \right)$$

$$(a(n) = 3 \cdot n - 1, b(n) = -2 \cdot n^2 + 5 \cdot n)$$

$$\frac{1}{2 + \pi} = \frac{\frac{2}{2}}{3 - \frac{9}{6 - \frac{20}{9 - \frac{35}{12 - \dots}}}}$$

$$(\quad \quad \quad 2 \quad \quad)$$

$$(a(n) = 3 \cdot n, b(n) = -2 \cdot n^2 + 3 \cdot n)$$

$$\begin{array}{r} 3 \qquad 12 \\ \hline 3 + 4 \cdot \pi \qquad 2 \\ 3 + \frac{\quad}{3} \\ 6 - \frac{\quad}{12} \\ 9 - \frac{\quad}{25} \\ 12 - \frac{\quad}{\quad} \end{array}$$

$$\left(\begin{array}{c} \vdots \\ 2 \end{array} \right) \\ (a(n) = 3 \cdot n, b(n) = -2 \cdot n + 5 \cdot n)$$

$$\begin{array}{r} \frac{1}{\pi} = 1 - \frac{2}{6} \\ 4 - \frac{15}{28} \\ 7 - \frac{28}{45} \\ 10 - \frac{45}{13} \end{array}$$

$$\left(\begin{array}{c} \vdots \\ 2 \end{array} \right) \left(a(n) = 3 \cdot n + 1, b(n) = -2 \cdot n + n \right)$$

$$\begin{array}{r} 3 \cdot \pi + 2 \\ \hline = 1 + \frac{\quad}{\quad} \\ 2 + 6 \cdot \pi \\ 4 - \frac{\quad}{\quad} \\ 12 \\ 7 - \frac{\quad}{\quad} \\ 25 \\ 10 - \frac{\quad}{\quad} \\ 42 \\ 13 - \frac{\quad}{\quad} \end{array}$$

$$\left(\begin{array}{c} \vdots \\ 2 \\ \vdots \end{array} \right) \backslash a(n) = 3 \cdot n + 1, b(n) = -2 \cdot n^2 + n + 3 \backslash$$

$$\begin{aligned}
 - &= 1 + \frac{1}{\pi} \frac{4}{4 - \frac{2}{7 - \frac{9}{10 - \frac{20}{13 - \frac{35}{\ddots}}}}}
 \end{aligned}$$

$$\left(\begin{array}{c} 2 \\ a(n) = 3 \cdot n + 1, \; b(n) = -2 \cdot n + 3 \cdot n \end{array} \right)$$

$$\begin{aligned}
 \frac{3}{3 \cdot \pi} &= 1 + \frac{16}{4 + \frac{2}{7 - \frac{3}{10 - \frac{12}{13 - \frac{25}{\ddots}}}}}
 \end{aligned}$$

$$\left(\begin{array}{c} 2 \\ a(n) = 3 \cdot n + 1, \; b(n) = -2 \cdot n + 5 \cdot n \end{array} \right)$$

$$\begin{aligned}
 \frac{1}{2 - \pi} &= 2 - \frac{2}{5 - \frac{6}{8 - \frac{15}{11 - \frac{28}{14 - \frac{45}{\ddots}}}}}
 \end{aligned}$$

$$\left(\begin{array}{c} 2 \\ a(n) = 3 \cdot n + 2, \; b(n) = -2 \cdot n + n \end{array} \right)$$

$$\frac{3 + 8 \cdot \pi}{\pi + 3} = 2 + \frac{2}{5 - \frac{12}{8 - \frac{25}{11 - \frac{42}{14 - \frac{..}{2}}}}}$$

$$\left(\begin{matrix} 2 \\ a(n) = 3 \cdot n + 2, b(n) = - 2 \cdot n + n + 3 \end{matrix} \right)$$

$$\frac{1}{3 + 4 \cdot \pi} = 2 + \frac{12}{5 - \frac{2}{8 - \frac{9}{11 - \frac{20}{14 - \frac{35}{14 - \frac{..}{2}}}}}}$$

$$\left(\begin{matrix} 2 \\ a(n) = 3 \cdot n + 2, b(n) = - 2 \cdot n + 3 \cdot n \end{matrix} \right)$$

$$\frac{1}{3 + 8 \cdot \pi} = 3 - \frac{4}{6 - \frac{15}{9 - \frac{28}{12 - \frac{45}{15 - \frac{..}{2}}}}}$$

$$\left(\begin{matrix} 2 \\ a(n) = 3 \cdot n + 3, b(n) = - 2 \cdot n + n \end{matrix} \right)$$

$$3 = \frac{3 \cdot \pi}{2} + 1 + \frac{2}{2}$$

$$\begin{array}{r}
 3 \qquad \qquad \qquad 4 \\
 6 - \frac{\qquad \qquad \qquad}{12} \\
 9 - \frac{\qquad \qquad \qquad}{25} \\
 12 - \frac{\qquad \qquad \qquad}{42} \\
 15 - \frac{\qquad \qquad \qquad}{\qquad}
 \end{array}$$

$$\left(\begin{array}{c} 2 \\ a(n) = 3 \cdot n + 3, b(n) = - 2 \cdot n + n + 3 \end{array} \right)$$

$$\begin{array}{r}
 15 \cdot \pi \qquad \qquad \qquad 6 \\
 3 = \frac{\qquad \qquad \qquad}{3} + 1 + \frac{\qquad \qquad \qquad}{16} \\
 6 + \frac{\qquad \qquad \qquad}{4} \\
 9 - \frac{\qquad \qquad \qquad}{15} \\
 12 - \frac{\qquad \qquad \qquad}{30} \\
 15 - \frac{\qquad \qquad \qquad}{\qquad}
 \end{array}$$

$$\left(\begin{array}{c} 2 \\ a(n) = 3 \cdot n + 3, b(n) = - 2 \cdot n + 3 \cdot n + 5 \end{array} \right)$$

$$\begin{array}{r}
 9 \cdot \pi \qquad \qquad \qquad 2 \\
 \frac{\qquad \qquad \qquad}{3 - 16 \cdot \pi} = 4 + \frac{\qquad \qquad \qquad}{3} \\
 7 - \frac{\qquad \qquad \qquad}{12} \\
 10 - \frac{\qquad \qquad \qquad}{25} \\
 13 - \frac{\qquad \qquad \qquad}{42} \\
 16 - \frac{\qquad \qquad \qquad}{\qquad}
 \end{array}$$

$$\left(\begin{array}{c} 2 \\ a(n) = 3 \cdot n + 4, b(n) = - 2 \cdot n + n + 3 \end{array} \right)$$

$$- = 1 + \frac{1 \qquad \qquad \qquad 4}{\pi \qquad \qquad \qquad 4}$$

$$3 + \frac{\quad}{9}$$

$$5 + \frac{\quad}{16}$$

$$7 + \frac{\quad}{25}$$

$$9 + \frac{\quad}{\quad}$$

..

$$\left(\frac{\quad}{2} \right)$$

$$(a(n) = 2 \cdot n + 1, b(n) = n)$$

$$\frac{\quad}{\quad} = 3 + \frac{\frac{3}{2 - \pi} + \frac{4}{8}}{5 + \frac{\quad}{15}}$$

$$7 + \frac{\quad}{24}$$

$$9 + \frac{\quad}{35}$$

$$11 + \frac{\quad}{\quad}$$

..

$$\left(\frac{\quad}{2} \right)$$

$$(a(n) = 2 \cdot n + 3, b(n) = n^2 + 2 \cdot n)$$

$$\frac{\quad}{\quad} = 3 + \frac{\frac{\pi}{4 - \pi} + \frac{4}{9}}{5 + \frac{\quad}{16}}$$

$$7 + \frac{\quad}{25}$$

$$9 + \frac{\quad}{36}$$

$$11 + \frac{\quad}{\quad}$$

..

$$\left(\frac{\quad}{2} \right)$$

$$(a(n) = 2 \cdot n + 3, b(n) = n^2 + 2 \cdot n + 1)$$

$$\frac{\quad}{\quad} = 5 + \frac{\frac{5}{3 + 8 \cdot \pi} + \frac{8}{12}}{7 + \frac{\quad}{21}}$$

$$9 + \frac{\quad}{32}$$

$$11 + \frac{\quad}{45}$$

$$13 + \frac{\quad}{\quad}$$

..

$$\left(\frac{\quad}{\quad} \right)^2$$

$$(a(n) = 2 \cdot n + 5, b(n) = n^2 + 4 \cdot n)$$

$$\frac{3 + 6 \cdot \pi}{3 - 10 \cdot \pi} = 5 + \frac{8}{15}$$

$$7 + \frac{\quad}{24}$$

$$9 + \frac{\quad}{35}$$

$$11 + \frac{\quad}{48}$$

$$13 + \frac{\quad}{\quad}$$

..

$$\left(\frac{\quad}{\quad} \right)^2$$

$$(a(n) = 2 \cdot n + 5, b(n) = n^2 + 4 \cdot n + 3)$$

$$\frac{4 - \pi}{3 - \pi} = 5 + \frac{9}{16}$$

$$7 + \frac{\quad}{25}$$

$$9 + \frac{\quad}{36}$$

$$11 + \frac{\quad}{49}$$

$$13 + \frac{\quad}{\quad}$$

..

$$\left(\frac{\quad}{\quad} \right)^2$$

$$(a(n) = 2 \cdot n + 5, b(n) = n^2 + 4 \cdot n + 4)$$

$$\frac{4}{\pi} = 2 + \frac{8}{16}$$

$$6 + \frac{\quad}{36}$$

$$10 + \frac{\quad}{\quad}$$

$$\left(\begin{array}{c} 64 \\ 14 + \frac{\quad}{100} \\ 18 + \frac{\quad}{\quad} \\ \vdots \\ a(n) = 4 \cdot n + 2, b(n) = 4 \cdot n \end{array} \right)$$

$$\frac{\quad}{\quad} = 6 + \frac{\frac{12}{2 - \pi} + \frac{8}{32}}{10 + \frac{60}{14 + \frac{96}{18 + \frac{140}{22 + \frac{\quad}{\quad}}}}} \\ \left(\begin{array}{c} 2 \\ a(n) = 4 \cdot n + 6, b(n) = 4 \cdot n + 8 \cdot n \end{array} \right)$$

$$\frac{\quad}{\quad} = 6 + \frac{\frac{2 \cdot \pi}{4 - \pi} + \frac{16}{36}}{10 + \frac{64}{14 + \frac{100}{18 + \frac{144}{22 + \frac{\quad}{\quad}}}}} \\ \left(\begin{array}{c} 2 \\ a(n) = 4 \cdot n + 6, b(n) = 4 \cdot n + 8 \cdot n + 4 \end{array} \right)$$

$$\frac{\quad}{\quad} = 10 + \frac{\frac{20}{3 + 8 \cdot \pi} + \frac{16}{48}}{14 + \frac{84}{18 + \frac{128}{22 + \frac{\quad}{\quad}}}}$$

$$\left(\begin{array}{c} 180 \\ 26 + \frac{\quad}{\quad} \\ \vdots \\ 2 \end{array} \right) \\ (a(n) = 4 \cdot n + 10, b(n) = 4 \cdot n^2 + 16 \cdot n)$$

$$\frac{6 + 12 \cdot \pi}{3 - 10 \cdot \pi} = 10 + \frac{32}{60} \\ 14 + \frac{96}{18 + \frac{140}{22 + \frac{192}{26 + \frac{\quad}{\quad} \\ \vdots \\ 2}}} \\ (a(n) = 4 \cdot n + 10, b(n) = 4 \cdot n^2 + 16 \cdot n + 12)$$

$$\frac{2 - 8 \cdot \pi}{3 - \pi} = 10 + \frac{36}{64} \\ 14 + \frac{100}{18 + \frac{144}{22 + \frac{196}{26 + \frac{\quad}{\quad} \\ \vdots \\ 2}}} \\ (a(n) = 4 \cdot n + 10, b(n) = 4 \cdot n^2 + 16 \cdot n + 16)$$

$$\frac{9}{\pi} = 3 + \frac{12}{36} \\ 9 + \frac{81}{15 + \frac{144}{21 + \frac{225}{\quad}}}$$

$$27 + \text{---}$$

..

$$\left(\begin{array}{c} 2 \\ a(n) = 6 \cdot n + 3, b(n) = 9 \cdot n \end{array} \right)$$

$$\text{---} = 9 + \frac{27}{2 - \pi} + \frac{12}{15 + \frac{72}{135}}$$

$$21 + \frac{216}{27 + \frac{315}{33 + \text{---}}}$$

$$33 + \text{---}$$

$$33 + \text{---}$$

$$\left(\begin{array}{c} 2 \\ a(n) = 6 \cdot n + 9, b(n) = 9 \cdot n + 18 \cdot n \end{array} \right)$$

$$\text{---} = 9 + \frac{3 \cdot \pi}{4 - \pi} + \frac{36}{15 + \frac{81}{144}}$$

$$21 + \frac{225}{27 + \frac{324}{33 + \text{---}}}$$

$$27 + \frac{324}{33 + \text{---}}$$

$$27 + \frac{324}{33 + \text{---}}$$

$$33 + \text{---}$$

$$33 + \text{---}$$

$$\left(\begin{array}{c} 2 \\ a(n) = 6 \cdot n + 9, b(n) = 9 \cdot n + 18 \cdot n + 9 \end{array} \right)$$

$$\text{---} = 4 + \frac{16}{\pi} + \frac{16}{12 + \frac{64}{144}}$$

$$20 + \frac{256}{28 + \frac{400}{36 + \text{---}}}$$

$$28 + \frac{400}{36 + \text{---}}$$

$$28 + \frac{400}{36 + \text{---}}$$

$$36 + \text{---}$$

$$36 + \text{---}$$

..

$$\left(\begin{array}{c} 1 \\ a(n) = 8 \cdot n + 4, b(n) = 16 \cdot n \end{array} \right)$$

$$\frac{1}{n} = 5 + \frac{25}{n} + \frac{20}{100} + \frac{225}{400} + \frac{25}{400} + \frac{625}{400} + \frac{45}{400} + \dots$$

$$\left(\begin{array}{c} 1 \\ a(n) = 10 \cdot n + 5, b(n) = 25 \cdot n \end{array} \right)$$