

more constants

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1 e constant

using hash table with limit $+20$, polynomials with limit $+20$. time - about 2 hours.

$$\frac{2e}{-3+e} = -20 - \frac{16}{-24 - \frac{32}{-28 - \frac{48}{-32 - \frac{64}{-36 - \frac{80}{\dots}}}}}$$

$$\frac{4e}{2-e} = -16 - \frac{16}{-20 - \frac{32}{-24 - \frac{48}{-28 - \frac{64}{-32 - \frac{80}{\dots}}}}}$$

$$-4e = -12 - \frac{16}{-16 - \frac{32}{-20 - \frac{48}{-24 - \frac{64}{-28 - \frac{80}{\dots}}}}}$$

$$4e = 12 - \frac{16}{16 - \frac{32}{20 - \frac{48}{24 - \frac{64}{28 - \frac{80}{\dots}}}}}$$

$$\frac{4e}{-2+e} = 16 - \frac{16}{20 - \frac{32}{24 - \frac{48}{28 - \frac{64}{32 - \frac{80}{\dots}}}}}$$

$$\frac{2e}{3-e} = 20 - \frac{16}{24 - \frac{32}{28 - \frac{48}{32 - \frac{64}{36 - \frac{80}{\dots}}}}}$$

$$\frac{3(-2+e)}{8-3e} = -15 - \frac{18}{-18 - \frac{27}{-21 - \frac{36}{-24 - \frac{45}{-27 - \frac{54}{\dots}}}}}$$

$$\frac{3}{-3+e} = -12 - \frac{18}{-15 - \frac{27}{-18 - \frac{36}{-21 - \frac{45}{-24 - \frac{54}{\dots}}}}}$$

$$\frac{3(-1+e)}{2-e} = -9 - \frac{18}{-12 - \frac{27}{-15 - \frac{36}{-18 - \frac{45}{-21 - \frac{54}{\dots}}}}}$$

$$\frac{3(1-e)}{2-e} = 9 - \frac{18}{12 - \frac{27}{15 - \frac{36}{18 - \frac{45}{21 - \frac{54}{\dots}}}}}$$

$$\frac{3}{3-e} = 12 - \frac{18}{15 - \frac{27}{18 - \frac{36}{21 - \frac{45}{24 - \frac{54}{\dots}}}}}$$

$$\frac{3(2-e)}{8-3e} = 15 - \frac{18}{18 - \frac{27}{21 - \frac{36}{24 - \frac{45}{27 - \frac{54}{\dots}}}}}$$

$$\frac{e}{8-3e} = -18 - \frac{9}{-21 - \frac{18}{-24 - \frac{27}{-27 - \frac{36}{-30 - \frac{45}{\dots}}}}}$$

$$\frac{3e}{2(-3+e)} = -15 - \frac{9}{-18 - \frac{18}{-21 - \frac{27}{-24 - \frac{36}{-27 - \frac{45}{\dots}}}}}$$

$$\frac{3e}{2-e} = -12 - \frac{9}{-15 - \frac{18}{-18 - \frac{27}{-21 - \frac{36}{-24 - \frac{45}{\dots}}}}}$$

$$-3e = -9 - \frac{9}{-12 - \frac{18}{-15 - \frac{27}{-18 - \frac{36}{-21 - \frac{45}{\dots}}}}}$$

$$3e = 9 - \frac{9}{12 - \frac{18}{15 - \frac{27}{18 - \frac{36}{21 - \frac{45}{\dots}}}}}$$

$$\frac{3e}{-2+e} = 12 - \frac{9}{15 - \frac{18}{18 - \frac{27}{21 - \frac{36}{24 - \frac{45}{\dots}}}}}$$

$$\frac{3e}{2(3-e)} = 15 - \frac{9}{18 - \frac{18}{21 - \frac{27}{24 - \frac{36}{27 - \frac{45}{\dots}}}}}$$

$$\frac{e}{-8+3e} = 18 - \frac{9}{21 - \frac{18}{24 - \frac{27}{27 - \frac{36}{30 - \frac{45}{\dots}}}}}$$

$$\frac{3(-5+2e)}{8-3e} = -10 - \frac{16}{-12 - \frac{20}{-14 - \frac{24}{-16 - \frac{28}{-18 - \frac{32}{\dots}}}}}$$

$$\frac{e}{-3+e} = -10 - \frac{4}{-12 - \frac{8}{-14 - \frac{12}{-16 - \frac{16}{-18 - \frac{20}{\dots}}}}}$$

$$\frac{2e}{2-e} = -8 - \frac{4}{-10 - \frac{8}{-12 - \frac{12}{-14 - \frac{16}{-16 - \frac{20}{\dots}}}}}$$

$$-2e = -6 - \frac{4}{-8 - \frac{8}{-10 - \frac{12}{-12 - \frac{16}{-14 - \frac{20}{\dots}}}}}$$

$$2e = 6 - \frac{4}{8 - \frac{8}{10 - \frac{12}{12 - \frac{16}{14 - \frac{20}{\dots}}}}}$$

$$\frac{2e}{-2+e} = 8 - \frac{4}{10 - \frac{8}{12 - \frac{12}{14 - \frac{16}{16 - \frac{20}{\dots}}}}}$$

$$\frac{e}{3-e} = 10 - \frac{4}{12 - \frac{8}{14 - \frac{12}{16 - \frac{16}{18 - \frac{20}{\dots}}}}}$$

$$\frac{3(-5+2e)}{2(8-3e)} = -5 - \frac{4}{-6 - \frac{5}{-7 - \frac{6}{-8 - \frac{7}{-9 - \frac{8}{\dots}}}}}$$

$$\frac{3(5-2e)}{2(8-3e)} = 5 - \frac{4}{6 - \frac{5}{7 - \frac{6}{8 - \frac{7}{9 - \frac{8}{\dots}}}}}$$

$$\frac{-8+3e}{19-7e} = -6 - \frac{3}{-7 - \frac{4}{-8 - \frac{5}{-9 - \frac{6}{-10 - \frac{7}{\dots}}}}}$$

$$\frac{2(-3+e)}{11-4e} = -5 - \frac{3}{-6 - \frac{4}{-7 - \frac{5}{-8 - \frac{6}{-9 - \frac{7}{\dots}}}}}$$

$$\frac{2(-2+e)}{5-2e} = -4 - \frac{3}{-5 - \frac{4}{-6 - \frac{5}{-7 - \frac{6}{-8 - \frac{7}{\dots}}}}}$$

$$\frac{2(2-e)}{5-2e} = 4 - \frac{3}{5 - \frac{4}{6 - \frac{5}{7 - \frac{6}{8 - \frac{7}{\dots}}}}}$$

$$\frac{2(3-e)}{11-4e} = 5 - \frac{3}{6 - \frac{4}{7 - \frac{5}{8 - \frac{6}{9 - \frac{7}{\dots}}}}}$$

$$\frac{8-3e}{19-7e} = 6 - \frac{3}{7 - \frac{4}{8 - \frac{5}{9 - \frac{6}{10 - \frac{7}{\ddots}}}}}$$

$$\frac{-2+e}{8-3e} = -5 - \frac{2}{-6 - \frac{3}{-7 - \frac{4}{-8 - \frac{5}{-9 - \frac{6}{\ddots}}}}}$$

$$\frac{1}{-3+e} = -4 - \frac{2}{-5 - \frac{3}{-6 - \frac{4}{-7 - \frac{5}{-8 - \frac{6}{\ddots}}}}}$$

$$\frac{-1+e}{2-e} = -3 - \frac{2}{-4 - \frac{3}{-5 - \frac{4}{-6 - \frac{5}{-7 - \frac{6}{\ddots}}}}}$$

$$\frac{1-e}{2-e} = 3 - \frac{2}{4 - \frac{3}{5 - \frac{4}{6 - \frac{5}{7 - \frac{6}{\ddots}}}}}$$

$$\frac{1}{3-e} = 4 - \frac{2}{5 - \frac{3}{6 - \frac{4}{7 - \frac{5}{8 - \frac{6}{\ddots}}}}}$$

$$\frac{2-e}{8-3e} = 5 - \frac{2}{6 - \frac{3}{7 - \frac{4}{8 - \frac{5}{9 - \frac{6}{\ddots}}}}}$$

$$\frac{e}{2(-3+e)} = -5 - \frac{1}{-6 - \frac{2}{-7 - \frac{3}{-8 - \frac{4}{-9 - \frac{5}{\ddots}}}}}$$

$$\frac{e}{2-e} = -4 - \frac{1}{-5 - \frac{2}{-6 - \frac{3}{-7 - \frac{4}{-8 - \frac{5}{\ddots}}}}}$$

$$-e = -3 - \frac{1}{-4 - \frac{2}{-5 - \frac{3}{-6 - \frac{4}{-7 - \frac{5}{\ddots}}}}}$$

$$e = 3 - \frac{1}{4 - \frac{2}{5 - \frac{3}{6 - \frac{4}{7 - \frac{5}{\ddots}}}}}$$

$$\frac{e}{-2+e} = 4 - \frac{1}{5 - \frac{2}{6 - \frac{3}{7 - \frac{4}{8 - \frac{5}{\ddots}}}}}$$

$$\frac{e}{2(3-e)} = 5 - \frac{1}{6 - \frac{2}{7 - \frac{3}{8 - \frac{4}{9 - \frac{5}{\ddots}}}}}$$

$$\frac{3-e}{19-7e} = -10 + \frac{1}{-14 + \frac{1}{-18 + \frac{1}{-22 + \frac{1}{-26 + \frac{1}{\ddots}}}}}$$

$$\frac{1-e}{3-e} = -6 + \frac{1}{-10 + \frac{1}{-14 + \frac{1}{-18 + \frac{1}{-22 + \frac{1}{\ddots}}}}}$$

$$\frac{e+3}{1+e} = 2 + \frac{1}{-2 + \frac{1}{-6 + \frac{1}{-10 + \frac{1}{-14 + \frac{1}{\ddots}}}}}$$

$$-\frac{e+3}{1+e} = -2 + \frac{1}{2 + \frac{1}{6 + \frac{1}{10 + \frac{1}{14 + \frac{1}{\ddots}}}}}$$

$$\frac{-1+e}{3-e} = 6 + \frac{1}{10 + \frac{1}{14 + \frac{1}{18 + \frac{1}{22 + \frac{1}{\ddots}}}}}$$

$$\frac{-3+e}{19-7e} = 10 + \frac{1}{14 + \frac{1}{18 + \frac{1}{22 + \frac{1}{26 + \frac{1}{\ddots}}}}}$$

$$\frac{2(3-e)}{19-7e} = -20 + \frac{4}{-28 + \frac{4}{-36 + \frac{4}{-44 + \frac{4}{-52 + \frac{4}{\ddots}}}}}$$

$$\frac{2(1-e)}{3-e} = -12 + \frac{4}{-20 + \frac{4}{-28 + \frac{4}{-36 + \frac{4}{-44 + \frac{4}{\ddots}}}}}$$

$$\frac{2(e+3)}{1+e} = 4 + \frac{4}{-4 + \frac{4}{-12 + \frac{4}{-20 + \frac{4}{-28 + \frac{4}{\ddots}}}}}$$

$$-\frac{2e+6}{1+e} = -4 + \frac{4}{4 + \frac{4}{12 + \frac{4}{20 + \frac{4}{28 + \frac{4}{\ddots}}}}}$$

$$\frac{2(-1+e)}{3-e} = 12 + \frac{4}{20 + \frac{4}{28 + \frac{4}{36 + \frac{4}{44 + \frac{4}{\ddots}}}}}$$

$$\frac{2(-3+e)}{19-7e} = 20 + \frac{4}{28 + \frac{4}{36 + \frac{4}{44 + \frac{4}{52 + \frac{4}{\ddots}}}}}$$

$$\frac{3(1-e)}{3-e} = -18 + \frac{9}{-30 + \frac{9}{-42 + \frac{9}{-54 + \frac{9}{-66 + \frac{9}{\ddots}}}}}$$

$$\frac{3(e+3)}{1+e} = 6 + \frac{9}{-6 + \frac{9}{-18 + \frac{9}{-30 + \frac{9}{-42 + \dots}}}}$$

$$-\frac{3e+9}{1+e} = -6 + \frac{9}{6 + \frac{9}{18 + \frac{9}{30 + \frac{9}{42 + \dots}}}}$$

$$\frac{3(-1+e)}{3-e} = 18 + \frac{9}{30 + \frac{9}{42 + \frac{9}{54 + \frac{9}{66 + \dots}}}}$$

$$\frac{4(e+3)}{1+e} = 8 + \frac{16}{-8 + \frac{16}{-24 + \frac{16}{-40 + \frac{16}{-56 + \dots}}}}$$

$$-\frac{4e+12}{1+e} = -8 + \frac{16}{8 + \frac{16}{24 + \frac{16}{40 + \frac{16}{56 + \dots}}}}$$

$$\frac{1}{2(8-3e)} = -3 + \frac{1}{-4 + \frac{2}{-5 + \frac{3}{-6 + \frac{4}{-7 + \frac{5}{\dots}}}}}$$

$$\frac{1}{5-2e} = -2 + \frac{1}{-3 + \frac{2}{-4 + \frac{3}{-5 + \frac{4}{-6 + \frac{5}{\dots}}}}}$$

$$\frac{1}{2-e} = -1 + \frac{1}{-2 + \frac{2}{-3 + \frac{3}{-4 + \frac{4}{-5 + \frac{5}{\dots}}}}}$$

$$\frac{1}{-2+e} = 1 + \frac{1}{2 + \frac{2}{3 + \frac{3}{4 + \frac{4}{5 + \frac{5}{\dots}}}}}$$

$$\frac{1}{-5+2e} = 2 + \frac{1}{3 + \frac{2}{4 + \frac{3}{5 + \frac{4}{6 + \frac{5}{\dots}}}}}$$

$$\frac{1}{2(-8+3e)} = 3 + \frac{1}{4 + \frac{2}{5 + \frac{3}{6 + \frac{4}{7 + \frac{5}{\dots}}}}}$$

$$\frac{5-2e}{11-4e} = -3 + \frac{2}{-4 + \frac{3}{-5 + \frac{4}{-6 + \frac{5}{-7 + \frac{6}{\dots}}}}}$$

$$\frac{2-e}{3-e} = -2 + \frac{2}{-3 + \frac{3}{-4 + \frac{4}{-5 + \frac{5}{-6 + \frac{6}{\dots}}}}}$$

$$1 - e = -1 + \frac{2}{-2 + \frac{3}{-3 + \frac{4}{-4 + \frac{5}{-5 + \frac{6}{\ddots}}}}}$$

$$-1 + e = 1 + \frac{2}{2 + \frac{3}{3 + \frac{4}{4 + \frac{5}{5 + \frac{6}{\ddots}}}}}$$

$$\frac{-2 + e}{3 - e} = 2 + \frac{2}{3 + \frac{3}{4 + \frac{4}{5 + \frac{5}{6 + \frac{6}{\ddots}}}}}$$

$$\frac{-5 + 2e}{11 - 4e} = 3 + \frac{2}{4 + \frac{3}{5 + \frac{4}{6 + \frac{5}{7 + \frac{6}{\ddots}}}}}$$

$$\frac{11 - 4e}{19 - 7e} = -4 + \frac{3}{-5 + \frac{4}{-6 + \frac{5}{-7 + \frac{6}{-8 + \frac{7}{\ddots}}}}}$$

$$\frac{2(3 - e)}{8 - 3e} = -3 + \frac{3}{-4 + \frac{4}{-5 + \frac{5}{-6 + \frac{6}{-7 + \frac{7}{\ddots}}}}}$$

$$\frac{2}{2 - e} = -2 + \frac{3}{-3 + \frac{4}{-4 + \frac{5}{-5 + \frac{6}{-6 + \frac{7}{\ddots}}}}}$$

$$\frac{2}{-2 + e} = 2 + \frac{3}{3 + \frac{4}{4 + \frac{5}{5 + \frac{6}{6 + \frac{7}{\ddots}}}}}$$

$$\frac{2(-3 + e)}{8 - 3e} = 3 + \frac{3}{4 + \frac{4}{5 + \frac{5}{6 + \frac{6}{7 + \frac{7}{\ddots}}}}}$$

$$\frac{-11 + 4e}{19 - 7e} = 4 + \frac{3}{5 + \frac{4}{6 + \frac{5}{7 + \frac{6}{8 + \frac{7}{\ddots}}}}}$$

$$\frac{3(2 - e)}{2(3 - e)} = -3 + \frac{4}{-4 + \frac{5}{-5 + \frac{6}{-6 + \frac{7}{-7 + \frac{8}{\ddots}}}}}$$

$$\frac{3(-2 + e)}{2(3 - e)} = 3 + \frac{4}{4 + \frac{5}{5 + \frac{6}{6 + \frac{7}{7 + \frac{8}{\ddots}}}}}$$

$$\frac{1}{8 - 3e} = -6 + \frac{4}{-8 + \frac{8}{-10 + \frac{12}{-12 + \frac{16}{-14 + \frac{20}{\ddots}}}}}$$

$$\frac{2}{5-2e} = -4 + \frac{4}{-6 + \frac{8}{-8 + \frac{12}{-10 + \frac{16}{-12 + \frac{20}{\dots}}}}}$$

$$\frac{2}{2-e} = -2 + \frac{4}{-4 + \frac{8}{-6 + \frac{12}{-8 + \frac{16}{-10 + \frac{20}{\dots}}}}}$$

$$\frac{2}{-2+e} = 2 + \frac{4}{4 + \frac{8}{6 + \frac{12}{8 + \frac{16}{10 + \frac{20}{\dots}}}}}$$

$$\frac{2}{-5+2e} = 4 + \frac{4}{6 + \frac{8}{8 + \frac{12}{10 + \frac{16}{12 + \frac{20}{\dots}}}}}$$

$$\frac{1}{-8+3e} = 6 + \frac{4}{8 + \frac{8}{10 + \frac{12}{12 + \frac{16}{14 + \frac{20}{\dots}}}}}$$

$$\frac{2(5-2e)}{11-4e} = -6 + \frac{8}{-8 + \frac{12}{-10 + \frac{16}{-12 + \frac{20}{-14 + \frac{24}{\dots}}}}}$$

$$\frac{2(2-e)}{3-e} = -4 + \frac{8}{-6 + \frac{12}{-8 + \frac{16}{-10 + \frac{20}{-12 + \frac{24}{\dots}}}}}$$

$$2-2e = -2 + \frac{8}{-4 + \frac{12}{-6 + \frac{16}{-8 + \frac{20}{-10 + \frac{24}{\dots}}}}}$$

$$-2+2e = 2 + \frac{8}{4 + \frac{12}{6 + \frac{16}{8 + \frac{20}{10 + \frac{24}{\dots}}}}}$$

$$\frac{2(-2+e)}{3-e} = 4 + \frac{8}{6 + \frac{12}{8 + \frac{16}{10 + \frac{20}{12 + \frac{24}{\dots}}}}}$$

$$\frac{2(-5+2e)}{11-4e} = 6 + \frac{8}{8 + \frac{12}{10 + \frac{16}{12 + \frac{20}{14 + \frac{24}{\dots}}}}}$$

$$\frac{4(3-e)}{8-3e} = -6 + \frac{12}{-8 + \frac{16}{-10 + \frac{20}{-12 + \frac{24}{-14 + \frac{28}{\dots}}}}}$$

$$\frac{4}{2-e} = -4 + \frac{12}{-6 + \frac{16}{-8 + \frac{20}{-10 + \frac{24}{-12 + \frac{28}{\dots}}}}}$$

$$\frac{4}{-2+e} = 4 + \frac{12}{6 + \frac{16}{8 + \frac{20}{10 + \frac{24}{12 + \frac{28}{\dots}}}}}$$

$$\frac{4(-3+e)}{8-3e} = 6 + \frac{12}{8 + \frac{16}{10 + \frac{20}{12 + \frac{24}{14 + \frac{28}{\dots}}}}}$$

$$\frac{3(2-e)}{3-e} = -6 + \frac{16}{-8 + \frac{20}{-10 + \frac{24}{-12 + \frac{28}{-14 + \frac{32}{\dots}}}}}$$

$$\frac{3(-2+e)}{3-e} = 6 + \frac{16}{8 + \frac{20}{10 + \frac{24}{12 + \frac{28}{14 + \frac{32}{\dots}}}}}$$

$$\frac{3}{2(8-3e)} = -9 + \frac{9}{-12 + \frac{18}{-15 + \frac{27}{-18 + \frac{36}{-21 + \frac{45}{\dots}}}}}$$

$$\frac{3}{5-2e} = -6 + \frac{9}{-9 + \frac{18}{-12 + \frac{27}{-15 + \frac{36}{-18 + \frac{45}{\dots}}}}}$$

$$\frac{3}{2-e} = -3 + \frac{9}{-6 + \frac{18}{-9 + \frac{27}{-12 + \frac{36}{-15 + \frac{45}{\dots}}}}}$$

$$\frac{3}{-2+e} = 3 + \frac{9}{6 + \frac{18}{9 + \frac{27}{12 + \frac{36}{15 + \frac{45}{\dots}}}}}$$

$$\frac{3}{-5+2e} = 6 + \frac{9}{9 + \frac{18}{12 + \frac{27}{15 + \frac{36}{18 + \frac{45}{\dots}}}}}$$

$$\frac{3}{2(-8+3e)} = 9 + \frac{9}{12 + \frac{18}{15 + \frac{27}{18 + \frac{36}{21 + \frac{45}{\dots}}}}}$$

$$\frac{3(5-2e)}{11-4e} = -9 + \frac{18}{-12 + \frac{27}{-15 + \frac{36}{-18 + \frac{45}{-21 + \frac{54}{\dots}}}}}$$

$$\frac{3(2-e)}{3-e} = -6 + \frac{18}{-9 + \frac{27}{-12 + \frac{36}{-15 + \frac{45}{-18 + \frac{54}{\dots}}}}}$$

$$3-3e = -3 + \frac{18}{-6 + \frac{27}{-9 + \frac{36}{-12 + \frac{45}{-15 + \frac{54}{\dots}}}}}$$

$$\begin{aligned}
-3 + 3e &= 3 + \frac{18}{6 + \frac{27}{9 + \frac{36}{12 + \frac{45}{15 + \frac{54}{\ddots}}}}} \\
\frac{3(-2 + e)}{3 - e} &= 6 + \frac{18}{9 + \frac{27}{12 + \frac{36}{15 + \frac{45}{18 + \frac{54}{\ddots}}}}} \\
\frac{3(-5 + 2e)}{11 - 4e} &= 9 + \frac{18}{12 + \frac{27}{15 + \frac{36}{18 + \frac{45}{21 + \frac{54}{\ddots}}}}} \\
\frac{2}{8 - 3e} &= -12 + \frac{16}{-16 + \frac{32}{-20 + \frac{48}{-24 + \frac{64}{-28 + \frac{80}{\ddots}}}}} \\
\frac{4}{5 - 2e} &= -8 + \frac{16}{-12 + \frac{32}{-16 + \frac{48}{-20 + \frac{64}{-24 + \frac{80}{\ddots}}}}} \\
\frac{4}{2 - e} &= -4 + \frac{16}{-8 + \frac{32}{-12 + \frac{48}{-16 + \frac{64}{-20 + \frac{80}{\ddots}}}}} \\
\frac{4}{-2 + e} &= 4 + \frac{16}{8 + \frac{32}{12 + \frac{48}{16 + \frac{64}{20 + \frac{80}{\ddots}}}}} \\
\frac{4}{-5 + 2e} &= 8 + \frac{16}{12 + \frac{32}{16 + \frac{48}{20 + \frac{64}{24 + \frac{80}{\ddots}}}}} \\
\frac{2}{-8 + 3e} &= 12 + \frac{16}{16 + \frac{32}{20 + \frac{48}{24 + \frac{64}{28 + \frac{80}{\ddots}}}}}
\end{aligned}$$

2 π constant

using hash table with limit +-13, polynomials with limit +-20. time - about 12 hours.

$$\begin{aligned}
\frac{8}{8 - 3\pi} &= -6 - \frac{4}{-12 - \frac{24}{-18 - \frac{60}{-24 - \frac{112}{-30 - \frac{180}{\ddots}}}}} \\
\frac{4}{2 - \pi} &= -4 - \frac{4}{-10 - \frac{24}{-16 - \frac{60}{-22 - \frac{112}{-28 - \frac{180}{\ddots}}}}}
\end{aligned}$$

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

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

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

$$\frac{8}{-8 + 3\pi} = 6 - \frac{4}{12 - \frac{24}{18 - \frac{60}{24 - \frac{112}{30 - \frac{180}{\dots}}}}}$$

$$\frac{18\pi}{-16 + 3\pi} = -8 + \frac{8}{-14 - \frac{12}{-20 - \frac{48}{-26 - \frac{100}{-32 - \frac{168}{\dots}}}}}$$

$$-\frac{3\pi}{2} - 2 = -6 + \frac{8}{-12 - \frac{12}{-18 - \frac{48}{-24 - \frac{100}{-30 - \frac{168}{\dots}}}}}$$

$$2 + \frac{3\pi}{2} = 6 + \frac{8}{12 - \frac{12}{18 - \frac{48}{24 - \frac{100}{30 - \frac{168}{\dots}}}}}$$

$$\frac{18\pi}{16 - 3\pi} = 8 + \frac{8}{14 - \frac{12}{20 - \frac{48}{26 - \frac{100}{32 - \frac{168}{\dots}}}}}$$

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

$$-\frac{4}{2 + \pi} = \frac{4}{-6 - \frac{8}{-12 - \frac{36}{-18 - \frac{80}{-24 - \frac{140}{\dots}}}}}$$

$$\frac{4}{\pi + 4} = 2 + \frac{4}{-4 - \frac{8}{-10 - \frac{36}{-16 - \frac{80}{-22 - \frac{140}{\dots}}}}}$$

$$-\frac{4}{\pi + 4} = -2 + \frac{4}{4 - \frac{8}{10 - \frac{36}{16 - \frac{80}{22 - \frac{140}{\dots}}}}}$$

$$\frac{4}{2 + \pi} = \frac{4}{6 - \frac{8}{12 - \frac{36}{18 - \frac{80}{24 - \frac{140}{\dots}}}}}$$

$$\begin{aligned}
\frac{8}{\pi} &= 2 + \frac{4}{8 - \frac{8}{14 - \frac{36}{20 - \frac{80}{26 - \frac{140}{\dots}}}}} \\
-\frac{8}{8 + 3\pi} &= 2 + \frac{12}{-4 + \frac{8}{-10 - \frac{12}{-16 - \frac{48}{-22 - \frac{100}{\dots}}}}} \\
\frac{4}{3\pi + 10} &= 4 + \frac{12}{-2 + \frac{8}{-8 - \frac{12}{-14 - \frac{48}{-20 - \frac{100}{\dots}}}}} \\
-\frac{4}{3\pi + 10} &= -4 + \frac{12}{2 + \frac{8}{8 - \frac{12}{14 - \frac{48}{20 - \frac{100}{\dots}}}}} \\
\frac{8}{8 + 3\pi} &= -2 + \frac{12}{4 + \frac{8}{10 - \frac{12}{16 - \frac{48}{22 - \frac{100}{\dots}}}}} \\
\frac{3\pi}{8 - 3\pi} &= -8 - \frac{12}{-11 - \frac{25}{-14 - \frac{42}{-17 - \frac{63}{-20 - \frac{88}{\dots}}}}} \\
-3 - \frac{3\pi}{4} &= -7 - \frac{12}{-10 - \frac{25}{-13 - \frac{42}{-16 - \frac{63}{-19 - \frac{88}{\dots}}}}} \\
\frac{3\pi}{4} + 3 &= 7 - \frac{12}{10 - \frac{25}{13 - \frac{42}{16 - \frac{63}{19 - \frac{88}{\dots}}}}} \\
\frac{3\pi}{-8 + 3\pi} &= 8 - \frac{12}{11 - \frac{25}{14 - \frac{42}{17 - \frac{63}{20 - \frac{88}{\dots}}}}} \\
\frac{3(-4 + \pi)}{10 - 3\pi} &= -6 - \frac{10}{-9 - \frac{21}{-12 - \frac{36}{-15 - \frac{55}{-18 - \frac{78}{\dots}}}}} \\
\frac{3(4 - \pi)}{10 - 3\pi} &= 6 - \frac{10}{9 - \frac{21}{12 - \frac{36}{15 - \frac{55}{18 - \frac{78}{\dots}}}}} \\
\frac{2(-4 + \pi)}{16 - 5\pi} &= -7 - \frac{9}{-10 - \frac{20}{-13 - \frac{35}{-16 - \frac{54}{-19 - \frac{77}{\dots}}}}} \\
\frac{4}{-4 + \pi} &= -6 - \frac{9}{-9 - \frac{20}{-12 - \frac{35}{-15 - \frac{54}{-18 - \frac{77}{\dots}}}}}
\end{aligned}$$

$$-2 - \frac{4}{\pi} = -5 - \frac{9}{-8 - \frac{20}{-11 - \frac{35}{-14 - \frac{54}{-17 - \frac{77}{\dots}}}}}$$

$$\frac{4}{\pi} + 2 = 5 - \frac{9}{8 - \frac{20}{11 - \frac{35}{14 - \frac{54}{17 - \frac{77}{\dots}}}}}$$

$$\frac{4}{4 - \pi} = 6 - \frac{9}{9 - \frac{20}{12 - \frac{35}{15 - \frac{54}{18 - \frac{77}{\dots}}}}}$$

$$\frac{2(4 - \pi)}{16 - 5\pi} = 7 - \frac{9}{10 - \frac{20}{13 - \frac{35}{16 - \frac{54}{19 - \frac{77}{\dots}}}}}$$

$$\frac{-2 + \pi}{2(3 - \pi)} = -5 - \frac{6}{-8 - \frac{15}{-11 - \frac{28}{-14 - \frac{45}{-17 - \frac{66}{\dots}}}}}$$

$$\frac{\pi}{2 - \pi} = -4 - \frac{6}{-7 - \frac{15}{-10 - \frac{28}{-13 - \frac{45}{-16 - \frac{66}{\dots}}}}}$$

$$\frac{\pi}{-2 + \pi} = 4 - \frac{6}{7 - \frac{15}{10 - \frac{28}{13 - \frac{45}{16 - \frac{66}{\dots}}}}}$$

$$\frac{2 - \pi}{2(3 - \pi)} = 5 - \frac{6}{8 - \frac{15}{11 - \frac{28}{14 - \frac{45}{17 - \frac{66}{\dots}}}}}$$

$$\frac{6}{8 - 3\pi} = -5 - \frac{5}{-8 - \frac{14}{-11 - \frac{27}{-14 - \frac{44}{-17 - \frac{65}{\dots}}}}}$$

$$\frac{6}{-8 + 3\pi} = 5 - \frac{5}{8 - \frac{14}{11 - \frac{27}{14 - \frac{44}{17 - \frac{65}{\dots}}}}}$$

$$\frac{8}{8 - 3\pi} = -6 - \frac{3}{-9 - \frac{12}{-12 - \frac{25}{-15 - \frac{42}{-18 - \frac{63}{\dots}}}}}$$

$$-\frac{8}{\pi} - 2 = -5 - \frac{3}{-8 - \frac{12}{-11 - \frac{25}{-14 - \frac{42}{-17 - \frac{63}{\dots}}}}}$$

$$2 + \frac{8}{\pi} = 5 - \frac{3}{8 - \frac{12}{11 - \frac{25}{14 - \frac{42}{17 - \frac{63}{\dots}}}}}$$

$$\begin{aligned}
\frac{8}{-8+3\pi} &= 6 - \frac{3}{9 - \frac{12}{12 - \frac{25}{15 - \frac{42}{18 - \frac{63}{\dots}}}}} \\
\frac{2}{-10+3\pi} &= -4 - \frac{3}{-7 - \frac{10}{-10 - \frac{21}{-13 - \frac{36}{-16 - \frac{55}{\dots}}}}} \\
\frac{2}{-4+\pi} &= -3 - \frac{3}{-6 - \frac{10}{-9 - \frac{21}{-12 - \frac{36}{-15 - \frac{55}{\dots}}}}} \\
\frac{2}{4-\pi} &= 3 - \frac{3}{6 - \frac{10}{9 - \frac{21}{12 - \frac{36}{15 - \frac{55}{\dots}}}}} \\
\frac{2}{10-3\pi} &= 4 - \frac{3}{7 - \frac{10}{10 - \frac{21}{13 - \frac{36}{16 - \frac{55}{\dots}}}}} \\
\frac{4-3\pi}{2(10-3\pi)} &= -5 - \frac{2}{-8 - \frac{9}{-11 - \frac{20}{-14 - \frac{35}{-17 - \frac{54}{\dots}}}}} \\
\frac{\pi}{-4+\pi} &= -4 - \frac{2}{-7 - \frac{9}{-10 - \frac{20}{-13 - \frac{35}{-16 - \frac{54}{\dots}}}}} \\
-\frac{\pi}{2} - 1 &= -3 - \frac{2}{-6 - \frac{9}{-9 - \frac{20}{-12 - \frac{35}{-15 - \frac{54}{\dots}}}}} \\
-\frac{\pi+4}{2+\pi} &= -2 - \frac{2}{-5 - \frac{9}{-8 - \frac{20}{-11 - \frac{35}{-14 - \frac{54}{\dots}}}}} \\
\frac{\pi+4}{2+\pi} &= 2 - \frac{2}{5 - \frac{9}{8 - \frac{20}{11 - \frac{35}{14 - \frac{54}{\dots}}}}} \\
1 + \frac{\pi}{2} &= 3 - \frac{2}{6 - \frac{9}{9 - \frac{20}{12 - \frac{35}{15 - \frac{54}{\dots}}}}} \\
\frac{\pi}{4-\pi} &= 4 - \frac{2}{7 - \frac{9}{10 - \frac{20}{13 - \frac{35}{16 - \frac{54}{\dots}}}}} \\
\frac{-4+3\pi}{2(10-3\pi)} &= 5 - \frac{2}{8 - \frac{9}{11 - \frac{20}{14 - \frac{35}{17 - \frac{54}{\dots}}}}}
\end{aligned}$$

$$\frac{4}{8-3\pi} = -3 - \frac{1}{-6 - \frac{6}{-9 - \frac{15}{-12 - \frac{28}{-15 - \frac{45}{\dots}}}}}$$

$$\frac{2}{2-\pi} = -2 - \frac{1}{-5 - \frac{6}{-8 - \frac{15}{-11 - \frac{28}{-14 - \frac{45}{\dots}}}}}$$

$$-\frac{2}{\pi} = -1 - \frac{1}{-4 - \frac{6}{-7 - \frac{15}{-10 - \frac{28}{-13 - \frac{45}{\dots}}}}}$$

$$\frac{2}{\pi} = 1 - \frac{1}{4 - \frac{6}{7 - \frac{15}{10 - \frac{28}{13 - \frac{45}{\dots}}}}}$$

$$\frac{2}{-2+\pi} = 2 - \frac{1}{5 - \frac{6}{8 - \frac{15}{11 - \frac{28}{14 - \frac{45}{\dots}}}}}$$

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

$$\frac{9\pi}{-16+3\pi} = -4 + \frac{2}{-7 - \frac{3}{-10 - \frac{12}{-13 - \frac{25}{-16 - \frac{42}{\dots}}}}}$$

$$-\frac{3\pi}{4} - 1 = -3 + \frac{2}{-6 - \frac{3}{-9 - \frac{12}{-12 - \frac{25}{-15 - \frac{42}{\dots}}}}}$$

$$1 + \frac{3\pi}{4} = 3 + \frac{2}{6 - \frac{3}{9 - \frac{12}{12 - \frac{25}{15 - \frac{42}{\dots}}}}}$$

$$\frac{9\pi}{16-3\pi} = 4 + \frac{2}{7 - \frac{3}{10 - \frac{12}{13 - \frac{25}{16 - \frac{42}{\dots}}}}}$$

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

$$-\frac{4}{\pi} = -1 + \frac{1}{-4 - \frac{2}{-7 - \frac{9}{-10 - \frac{20}{-13 - \frac{35}{\dots}}}}}$$

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

$$\frac{2}{\pi+4} = 1 + \frac{1}{-2 - \frac{2}{-5 - \frac{9}{-8 - \frac{20}{-11 - \frac{35}{\dots}}}}}$$

$$-\frac{2}{\pi+4} = -1 + \frac{1}{2 - \frac{2}{5 - \frac{9}{8 - \frac{20}{11 - \frac{35}{\dots}}}}}$$

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

$$\frac{4}{\pi} = 1 + \frac{1}{4 - \frac{2}{7 - \frac{9}{10 - \frac{20}{13 - \frac{35}{\dots}}}}}$$

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

$$-\frac{15\pi}{16} - 1 = -3 + \frac{6}{-6 + \frac{3}{-9 - \frac{4}{-12 - \frac{15}{-15 - \frac{30}{\dots}}}}}$$

$$1 + \frac{15\pi}{16} = 3 + \frac{6}{6 + \frac{3}{9 - \frac{4}{12 - \frac{15}{15 - \frac{30}{\dots}}}}}$$

$$-\frac{16}{3\pi} = -1 + \frac{3}{-4 + \frac{2}{-7 - \frac{3}{-10 - \frac{12}{-13 - \frac{25}{\dots}}}}}$$

$$-\frac{12}{4+3\pi} = \frac{3}{-3 + \frac{2}{-6 - \frac{3}{-9 - \frac{12}{-12 - \frac{25}{\dots}}}}}$$

$$-\frac{4}{8+3\pi} = 1 + \frac{3}{-2 + \frac{2}{-5 - \frac{3}{-8 - \frac{12}{-11 - \frac{25}{\dots}}}}}$$

$$\frac{4}{8+3\pi} = -1 + \frac{3}{2 + \frac{2}{5 - \frac{3}{8 - \frac{12}{11 - \frac{25}{\dots}}}}}$$

$$\frac{12}{4+3\pi} = \frac{3}{3 + \frac{2}{6 - \frac{3}{9 - \frac{12}{12 - \frac{25}{\dots}}}}}$$

$$\frac{16}{3\pi} = 1 + \frac{3}{4 + \frac{2}{7 - \frac{3}{10 - \frac{12}{13 - \frac{25}{\dots}}}}}$$

$$\begin{aligned}
-\frac{4}{\pi} &= -1 + \frac{1}{-3 + \frac{4}{-5 + \frac{9}{-7 + \frac{16}{-9 + \frac{25}{\ddots}}}}} \\
\frac{4}{\pi} &= 1 + \frac{1}{3 + \frac{4}{5 + \frac{9}{7 + \frac{16}{9 + \frac{25}{\ddots}}}}} \\
\frac{4}{2 - \pi} &= -3 + \frac{3}{-5 + \frac{8}{-7 + \frac{15}{-9 + \frac{24}{-11 + \frac{35}{\ddots}}}}} \\
\frac{4}{-2 + \pi} &= 3 + \frac{3}{5 + \frac{8}{7 + \frac{15}{9 + \frac{24}{11 + \frac{35}{\ddots}}}}} \\
\frac{\pi}{-4 + \pi} &= -3 + \frac{4}{-5 + \frac{9}{-7 + \frac{16}{-9 + \frac{25}{-11 + \frac{36}{\ddots}}}}} \\
\frac{\pi}{4 - \pi} &= 3 + \frac{4}{5 + \frac{9}{7 + \frac{16}{9 + \frac{25}{11 + \frac{36}{\ddots}}}}} \\
\frac{8}{8 - 3\pi} &= -5 + \frac{5}{-7 + \frac{12}{-9 + \frac{21}{-11 + \frac{32}{-13 + \frac{45}{\ddots}}}}} \\
\frac{8}{-8 + 3\pi} &= 5 + \frac{5}{7 + \frac{12}{9 + \frac{21}{11 + \frac{32}{13 + \frac{45}{\ddots}}}}} \\
\frac{3(2 - \pi)}{10 - 3\pi} &= -5 + \frac{8}{-7 + \frac{15}{-9 + \frac{24}{-11 + \frac{35}{-13 + \frac{48}{\ddots}}}}} \\
\frac{3(-2 + \pi)}{10 - 3\pi} &= 5 + \frac{8}{7 + \frac{15}{9 + \frac{24}{11 + \frac{35}{13 + \frac{48}{\ddots}}}}} \\
\frac{4 - \pi}{3 - \pi} &= -5 + \frac{9}{-7 + \frac{16}{-9 + \frac{25}{-11 + \frac{36}{-13 + \frac{49}{\ddots}}}}} \\
\frac{-4 + \pi}{3 - \pi} &= 5 + \frac{9}{7 + \frac{16}{9 + \frac{25}{11 + \frac{36}{13 + \frac{49}{\ddots}}}}} \\
-\frac{8}{\pi} &= -2 + \frac{4}{-6 + \frac{16}{-10 + \frac{36}{-14 + \frac{64}{-18 + \frac{100}{\ddots}}}}} \\
\frac{8}{\pi} &= 2 + \frac{4}{6 + \frac{16}{10 + \frac{36}{14 + \frac{64}{18 + \frac{100}{\ddots}}}}}
\end{aligned}$$

3 *zeta*(2) constant

found by original Ramanujan project:

$$\frac{5}{\zeta(2)} = 3 + \frac{1}{25 + \frac{16}{69 + \frac{81}{135 + \frac{256}{223 + \frac{625}{\dots}}}}}$$

found by us:

$$\frac{4}{3\zeta(2)} = 1 - \frac{1}{7 - \frac{1}{19 - \frac{24}{37 - \frac{135}{61 - \frac{448}{\dots}}}}} = 1 - \frac{2 \cdot 1^4 - 1^3}{7 - \frac{2 \cdot 2^4 - 2^3}{19 - \frac{2 \cdot 3^4 - 3^3}{37 - \frac{2 \cdot 4^4 - 4^3}{61 - \frac{2 \cdot 5^4 - 5^3}{\dots}}}}}$$

$$\frac{4}{\zeta(2)} = 2 + \frac{8}{16 + \frac{128}{44 + \frac{648}{86 + \frac{2048}{142 + \frac{5000}{\dots}}}}} = 2 + \frac{8 \cdot 1^4}{16 + \frac{8 \cdot 2^4}{44 + \frac{8 \cdot 3^4}{86 + \frac{8 \cdot 4^4}{142 + \frac{8 \cdot 5^4}{\dots}}}}}$$

$$\frac{8}{2 + 3\zeta(2)} = 1 + \frac{1}{7 - \frac{8}{19 - \frac{81}{37 - \frac{320}{61 - \frac{875}{\dots}}}}} = 1 - \frac{2 \cdot 1^4 - 3 \cdot 1^3}{7 - \frac{2 \cdot 2^4 - 3 \cdot 2^3}{19 - \frac{2 \cdot 3^4 - 3 \cdot 3^3}{37 - \frac{2 \cdot 4^4 - 3 \cdot 4^3}{61 - \frac{2 \cdot 5^4 - 3 \cdot 5^3}{\dots}}}}}$$

$$\frac{3}{\zeta(2)} = 2 - \frac{2}{13 - \frac{48}{34 - \frac{270}{65 - \frac{896}{106 - \frac{2250}{\dots}}}}} = 2 - \frac{4 \cdot 1^4 - 2 \cdot 1^3}{13 - \frac{4 \cdot 2^4 - 2 \cdot 2^3}{34 - \frac{4 \cdot 3^4 - 2 \cdot 3^3}{65 - \frac{4 \cdot 4^4 - 2 \cdot 4^3}{106 - \frac{4 \cdot 5^4 - 2 \cdot 5^3}{\dots}}}}}$$

4 *zeta*(3) constant

found by original Ramanujan project:

$$\frac{5}{2\zeta(3)} = 2 + \frac{2}{23 + \frac{192}{82 + \frac{2430}{197 + \frac{14336}{386 + \frac{56250}{\dots}}}}}$$

found by us:

$$\frac{8}{7\zeta(3)} = 1 - \frac{1}{21 - \frac{64}{95 - \frac{729}{259 - \frac{4096}{549 - \frac{15625}{\dots}}}}}$$