this is a test

a) $\left(\frac{n-2}{n}\right) = \frac{n}{n} \cdot \frac{1-2\frac{1}{n}}{1} = \frac{1}{1} = 1$

b) $\left(\frac{n+1999}{n^2}\right) = \frac{n^2}{n^2} \cdot \frac{\frac{1}{n}+1999\frac{1}{n^2}}{1} = \frac{0}{1} = 0$

c) $\left(\frac{n}{3n+2}\right) = \frac{n}{n} \cdot \frac{1}{3+2\frac{1}{n}} = \frac{1}{3}$

d) $\left(\frac{\pi n^2+1}{2n-5}\right) = \frac{n}{n} \cdot \frac{\pi n+\frac{1}{n}}{2-5\frac{1}{n}} = \frac{+\infty}{2} = +\infty$?

e) $\left(\frac{3n^2-2n+5}{2n^2+8}\right) = \frac{n^2}{n^2} \cdot \frac{3-2\frac{1}{n}+5\frac{1}{n^2}}{2+8\frac{1}{n^2}} = \frac{3}{2}$

f) $\left(\frac{2n^2+12}{3-n-3n^2}\right) = \frac{n^2}{n^2} \cdot \frac{2+12\frac{1}{n^2}}{3\cdot\frac{1}{n^2}-\frac{1}{n}-3} = \frac{2}{-3} = -\frac{2}{3}$

g) $\left(\frac{1-3n^2}{n-2}\right) = \frac{n}{n} \cdot \frac{\frac{1}{n}-\overset{+\infty}{3n}}{1-2\frac{1}{2}} = \frac{+\infty}{1} = +\infty$?

h) $\left(\frac{-2n^2-5n+1}{2-8n}\right) = \frac{n}{n} \cdot \frac{-2n-5+\frac{1}{n}}{2\frac{1}{n}-8} = \frac{-\infty-5}{-8} = +\infty$

i) $\left(\frac{n^3-n+3}{n^2-1}\right) = \frac{n^2}{n^2} \cdot \frac{n-\frac{1}{n}+3\frac{1}{n^2}}{1-\frac{1}{n^2}} = \frac{+\infty}{1} = +\infty$

j) $\left(\frac{n^5-25n^3}{7n^9-2n^7}\right) = \frac{n^5}{n^9} \cdot \frac{\frac{1}{n^4}-25\frac{1}{n^6}}{7-2\frac{1}{n^2}} = \frac{0}{7} = 0$

$\boxed{(a+b)^3 = a^3+3a^2b+3ab^2+b^3}$

k) $\left(\frac{(n+4)^3-n(n+6)^2}{n^3}\right) = \frac{n^3+64+12n^2+48n-n\cdot(n^2+36+12n)}{n^3} = \frac{n^3+12n^2+48n+64-n^3-36n-12n^2}{n^3} = \frac{12n+64}{n^3} = \frac{n^3}{n^3} \cdot \frac{12\frac{1}{n^2}+64\cdot\frac{1}{n^3}}{1} = \frac{0}{1} = 0$

$(n+4)^3 = n^3 +$

$(n+4)\cdot(n+4)\cdot(n+4) = n^2+16+8n\cdot(n+4) = n^3+16n+8n^2+4n^2+64+32n = n^3+12n^2+48n+64$

$(n+4)(n+4) = n^2+16+8n$

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