Partial Product 2

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For when the infinite series (1) converges:
For this series to converge, I think that the degree of the numerator, or the f(n) function, has to be smaller than the degree of the denominator, or the g(n) function. For example, f(n) = $n^2 + 1$ and g(n) = $n^3 + 1$. This gives us a series that converges to 1.

For when the infinite series (1) diverges:
For this series to diverge, I think that the degree of the numerator, or the f(n) function, has to be larger than the degree of the denominator, or the g(n) function. For example, if you switch the equations from the first example to make f(n) = $n^3 + 1$ and g(n) = $n^2 + 1$ then you get a series that diverges to infinity.

For when the infinite series (2) converges:
For this series to converge, the constant b has to be between 0 and 1. For example, b = .5. This gives us a series that converges to 1.

For when the infinite series (2) diverges:
For this series to diverge, the constant b should be a natural number. For example, b = 2 gives us a series that diverges to infinity.