Activity: **Rational Root / Rational Zero Theorem**

RECALL

The Rational Zero Theorem

If $f(x) = a_n x^n + \cdots + a_1 x + a_0$ has *integer* coefficients, then every rational zero of f has the following form:

$$\frac{p}{q} = \frac{\text{factor of constant term } a_0}{\text{factor of leading coefficient } a_n}$$

Drag the green card to the right if it is a possible rational zero of the given polynomial, if not, drag it to the left.

NOT possible Rational Zeros	1) $2x^3 - x^2 + 19x + 10$	POSSIBLE Rational Zeros
☐ ☐ ☐ / ☐ ☐ ☐	± 1 ± 2 ± 3 ± 4 ± 5 ± 10 $\pm\frac{1}{2}$ $\pm\frac{2}{5}$ $\pm\frac{5}{2}$ $\pm\frac{5}{3}$	☐ ☐ ☐ / ☐ ☐ ☐

NOT possible Rational Zeros	2) $x^5 + 3x^4 - 18x^2 + 27$	POSSIBLE Rational Zeros
☐ ☐ ☐ / ☐ ☐ ☐	± 1 ± 2 ± 3 ± 4 ± 5 ± 6 ± 9 ± 27 $\pm\frac{1}{3}$ $\pm\frac{1}{9}$	☐ ☐ ☐ / ☐ ☐ ☐

NOT possible Rational Zeros	3) $5x^3 - 23x^2 - 65x - 22$	POSSIBLE Rational Zeros
☐ ☐ ☐ / ☐ ☐ ☐ / ☐ ☐ ☐	± 1 ± 2 ± 3 ± 4 ± 5 ± 10 ± 11 ± 12 ± 22 $\pm\frac{1}{5}$ $\pm\frac{2}{5}$ $\pm\frac{11}{5}$ $\pm\frac{22}{5}$ $\pm\frac{5}{11}$ $\pm\frac{5}{22}$	☐ ☐ ☐ / ☐ ☐ ☐ / ☐ ☐ ☐

How many attempts? ____.
How well did you do?

😆 Need help!   🙂 Just OK!   😁 Splendid

I HAVE TO REMEMBER THAT...
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