***Fractions and Decimals Investigation***

Some fractions have terminating decimals, some fractions do not. Is there a way to look at a fraction and tell if the decimal equivalent will be terminating or repeating?

Start by competing the following table, test some results of your own and try and come up with a rule as to why some fractions terminate while others do not.

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| **Fraction** | **Decimal** | **T or R** | **Fraction** | **Decimal** | **T or R** |
|  | **0·5** | **T** |  |  |  |
|  | **0·333…** | **R** |  |  |  |
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What happens when the denominator is even? odd? prime? multiple of 5?

What is your final hypothesis? Why do you think it is so?

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