

Name: _____

Classifying Rational and Irrational Numbers

- Rational Numbers Repeat or terminate
- Irrational Numbers go on and on and do not repeat

For each of the numbers below, decide whether it is rational or irrational and explain why?

Number	Reasoning
<i>Example: 0.21</i>	<i>Rational because it ends.</i>
$\frac{3}{12} = \frac{1}{4} = 0.25$	Rat \rightarrow b/c ends
12-2	
8.33865...	
3.14141414...	
12.52	
0	
.02202222	
$\sqrt{19}$	
$-\sqrt{32}$	
$\frac{6000}{1}$	

$8 - 2\sqrt{3}$	
1.234	
8,876,546	
$\sqrt{64}$	
$\frac{1}{9}$	
777.777777....	
$\sqrt{2} - \sqrt{2}$	
$\frac{4}{2} + \frac{5}{2}$	
$\pi * \pi$	
$\frac{\sqrt{8}}{\sqrt{2}}$	
$\sqrt{6} * \sqrt{6}$	
Rational + Rational	
Irrational + Irrational	
Rational(Rational)	
Irrational(irrational)	
Irrational(rational)	
$\frac{\text{rational}}{\text{rational}}$	
$\frac{\text{irrational}}{\text{irrational}}$	

$\text{Same \# (same \#)} \rightarrow \sqrt{3}(\sqrt{3}) = 3^{\text{Rat}}$ $\sqrt{3}(\sqrt{5}) = \sqrt{15}^{\text{IRR}}$

$\frac{\pi}{\pi} = 1$ $\frac{\pi}{\sqrt{3}} = \text{IRR}$ $\text{Rat} \rightarrow \frac{\text{same \#}}{\text{same \#}}$
 $\text{IRR} \rightarrow \text{two diff \#}'s$
 Rat