

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
Example: 0.21	Rational because it ends.
$\frac{3}{12} = \frac{1}{4} = 0.25$	Rat $\rightarrow$ terminates
$12 - 2 = 10$	Rat $\rightarrow$ whole #
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)	
$\frac{\text{rational}}{\text{rational}}$	$\frac{12}{4} = 3$
$\frac{\text{irrational}}{\text{irrational}}$	$\frac{\pi}{\pi} = 1$ $\frac{\pi}{\sqrt{3}}$

Rat  $\rightarrow \frac{\text{Rat}}{\text{Rat}} = \text{Rat}$

$\frac{\pi}{\sqrt{3}} = \text{Irrational}$  Sometimes Rat  
Sometimes IRR

$\downarrow$   
Rat