

Start these and we will check them

Name: _____

Classifying Rational and Irrational Numbers

- Rational Numbers _____ or _____
- Irrational Numbers go _____ and _____ and do _____ 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.
$\frac{3}{12}$	Rational because its a fraction decimal that terminates
12-2	rational because its a whole number
8.33865...	irrational / never ends NOR repeats
3.14141414...	Rational / repeats
12.52	Rational Decimal stops
0	whole Rational #
.02202222	rational Ends
$\sqrt{19}$	Irrational not a whole # / not perfect square
$-\sqrt{32}$	IRR → not perfect square
$\frac{6000}{1}$	Rat - whole # / Integer

$8 - 2\sqrt{3}$		Irr → has a non perfect $\sqrt{\quad}$
1.234		Rat → ends/terminates
8,876,546		Rat → whole #
$\sqrt{64} = 8$		Rat → whole #
$\frac{1}{9}$		Rat → repeats/pattern
777.777777....		Rat → repeat, non terminate
$\sqrt{2} - \sqrt{2} = 0$		Rat → whole #
$\frac{4}{2} + \frac{5}{2} = \frac{9}{2}$		Rat → decimal stops
$\pi * \pi$		Irr → no pattern, never stops
$\frac{\sqrt{8}}{\sqrt{2}} = 2$		Rat → whole #
$\sqrt{6} * \sqrt{6} = 6$		Rat → whole #
Rational + Rational	$1+2=3$	Rat → never get Irr
Irrational + Irrational	$\sqrt{8} + -\sqrt{8}$	Sometimes might be whole #
Rational(Rational)		Rat → never get Irr
Irrational(irrational)	$\sqrt{2} \cdot \sqrt{2} = \frac{\sqrt{4}}{2} = 1$	Sometimes → you could get whole #
Irrational(rational)	Sometimes	Irr → $\pi(2) = 2\pi$ $\pi(0) = 0$
$\frac{\text{rational}}{\text{rational}}$	$\frac{8}{4} = 2$	Rat → always
$\frac{\text{irrational}}{\text{irrational}}$	$\frac{\pi}{\pi} = 1$	Sometimes → Rat → Irr