Rational and Irrational Numbers

Name: _____	Date: _____	Score: _____ / 18

Quick Review and Helpful Hints

A *rational* number can be written as a fraction of integers; its decimal *terminates or repeats*. An *irrational* number cannot – its decimal runs forever without repeating (like π, or $\sqrt{n}$ when n is not a perfect square).

▷ **Example:** Is $\sqrt{9}$ rational or irrational? **Work:** $\sqrt{9} = 3$, a whole number, which is a fraction $\frac{3}{1}$. ★ **Answer:** Rational

Rational | Irrational.

Practice Problems

Tell whether each number is Rational or Irrational.

1. $\sqrt{9}$ _____
2. $\sqrt{2}$ _____
3. 0.5 _____
4. π _____
5. $\frac{1}{3}$ _____
6. $\sqrt{16}$ _____
7. $\sqrt{7}$ _____
8. $0.\overline{3}$ (repeating) _____
9. $\sqrt{25}$ _____
10. $\sqrt{10}$ _____
11. 4 _____
12. $-\frac{2}{5}$ _____
13. $\sqrt{100}$ _____
14. $0.1010010001\ldots$ _____

Word Problems

15. Is $\sqrt{4}$ rational or irrational? _____
16. Is π rational or irrational? _____
17. Is 7 a rational number? _____
18. Is $\sqrt{3}$ rational or irrational? _____

Scan Me

Answer Keys

1. Rational	**7.** Irrational	**13.** Rational
2. Irrational	**8.** Rational	**14.** Irrational
3. Rational	**9.** Rational	**15.** Rational
4. Irrational	**10.** Irrational	**16.** Irrational
5. Rational	**11.** Rational	**17.** Yes
6. Rational	**12.** Rational	**18.** Irrational

Step-by-Step Explanations

1. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $\sqrt{9} = 3$: rational. So the final answer is Rational.

2. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is 2 is not a perfect square: irrational. So the final answer is Irrational.

3. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is It terminates: rational. So the final answer is Rational.

4. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is π never repeats: irrational. So the final answer is Irrational.

5. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is A fraction of integers: rational. So the final answer is Rational.

6. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $\sqrt{16} = 4$: rational. So the final answer is Rational.

7. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is 7 is not a perfect square: irrational. So the final answer is Irrational.

8. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is A repeating decimal: rational. So the final answer is Rational.

9. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $\sqrt{25} = 5$: rational. So the final answer is Rational.

10. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is 10 is not a perfect square: irrational. So the final answer is Irrational.

11. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is A whole number $= \frac{4}{1}$: rational. So the final answer is Rational.

12. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is A fraction of integers: rational. So the final answer is Rational.

13. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $\sqrt{100} = 10$: rational. So the final answer is Rational.

14. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Non-repeating, non-terminating: irrational. So the final answer is Irrational.

15. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $\sqrt{4} = 2$: rational. So the final answer is Rational.

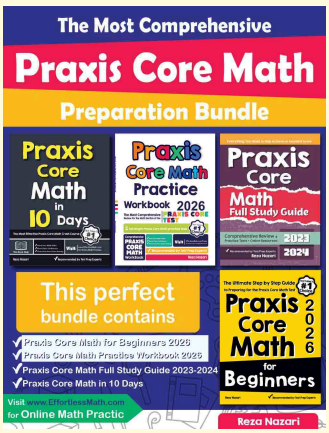
16. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is π is irrational. So the final answer is Irrational.

17. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $7 = \frac{7}{1}$, so yes. So the final answer is Yes.

18. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is 3 is not a perfect square: irrational. So the final answer is Irrational.

Keep Building Praxis Core Math Skills

Recommended Effortless Math resources



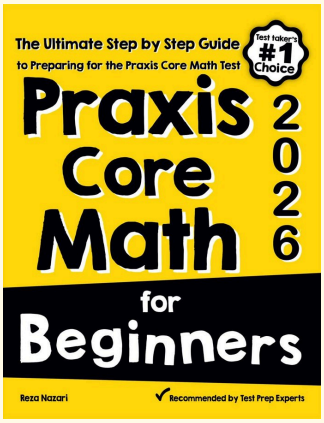
The Most Comprehensive Praxis Core Math Preparation Bundle

Use the complete Praxis Core Math resource for review, worked examples, extra practice, and test-style questions after each worksheet.

Scan Me

Download Instantly

STUDENT FAVORITE - Praxis Core Math for Beginners



Praxis Core Math for Beginners 2026

Step-by-step lessons, topic practice, and full review support for students who want a calm path through Praxis Core Math preparation.

A strong companion for self-study, tutoring, homework, and targeted review.

PDF Edition

Scan Me

Download Instantly

For more Praxis Core Math prep, visit EffortlessMath.com/Praxis-Core