

# Irrational Numbers Worksheet

**Part A: Identify Rational or Irrational:** Write **R** for Rational and **I** for Irrational.

1. \_\_\_\_\_  $\sqrt{16}$

5. \_\_\_\_\_  $-3$

9. \_\_\_\_\_  $\sqrt{50}$

2. \_\_\_\_\_  $\sqrt{7}$

6. \_\_\_\_\_  $\sqrt{81}$

10. \_\_\_\_\_  $2.5$

3. \_\_\_\_\_  $0.25$

7. \_\_\_\_\_  $\sqrt{10}$

4. \_\_\_\_\_  $\pi$

8. \_\_\_\_\_  $1.333333...$

**Part B: Determine Whether Each Number is Irrational** - Circle **Yes** if the number is irrational and **No** if it is rational.

Number	Irrational?	Number	Irrational?
11. $\sqrt{2}$	Yes / No	15. $0.121221222...$	Yes / No
12. $5/8$	Yes / No	16. $-7$	Yes / No
13. $\sqrt{36}$	Yes / No	17. $\sqrt{11}$	Yes / No
14. $\pi$	Yes / No	18. $4.75$	Yes / No

**Part C: Simplify Square Roots** - Simplify each radical.

19.  $\sqrt{25} =$  \_\_\_\_\_

21.  $\sqrt{64} =$  \_\_\_\_\_

23.  $\sqrt{121} =$  \_\_\_\_\_

20.  $\sqrt{49} =$  \_\_\_\_\_

22.  $\sqrt{100} =$  \_\_\_\_\_

24.  $\sqrt{144} =$  \_\_\_\_\_

**Part D: Estimate Irrational Numbers** - Estimate each irrational number to the nearest whole number.

25.  $\sqrt{5} \approx$  \_\_\_\_\_

27.  $\sqrt{30} \approx$  \_\_\_\_\_

29.  $\sqrt{90} \approx$  \_\_\_\_\_

26.  $\sqrt{18} \approx$  \_\_\_\_\_

28.  $\sqrt{70} \approx$  \_\_\_\_\_

30.  $\sqrt{200} \approx$  \_\_\_\_\_

**Part E: Compare Irrational Numbers** - Use **<**, **>**, or **=**.

31.  $\sqrt{2}$  \_\_\_\_\_  $1$

33.  $\sqrt{50}$  \_\_\_\_\_  $7$

35.  $\sqrt{10}$  \_\_\_\_\_  $3$

32.  $\sqrt{16}$  \_\_\_\_\_  $4$

34.  $\sqrt{81}$  \_\_\_\_\_  $9$

36.  $\pi$  \_\_\_\_\_  $3$

**Part F: Word Problems**

37. A square garden has an area of 64 square feet. What is the length of one side?

Answer: \_\_\_\_\_ feet

38. A square tile has an area of 49 square inches. What is the length of one side?

Answer: \_\_\_\_\_ inches

39. A square room has an area of 20 square meters. Is the side length rational or irrational?

Answer: \_\_\_\_\_