5-Day Worksheet Packet: Rational vs. Irrational Numbers

Standards:

- **Florida MA.8.NSO.1.1:** Compare and classify rational and irrational numbers.
- **NGSS MS-ETS1-2:** Apply mathematical concepts to analyze real-world problems in design.

Goal/Objective:
Students will explore, classify, and apply rational and irrational numbers through interactive activities and STEM applications, demonstrating understanding through discussion, hands-on work, and reflection.

Day 1 – Rational Numbers

Name: _____ **Date:** _____

Bellwork (Think-Pair-Share)

1. Write a number you see often (price, measurement, etc.): _____
2. Predict whether it is rational or irrational: _____
3. Explain why you think so: _____

Exit Ticket

1. Write two numbers and explain why each is rational:
   - Number 1: _____ Reason: _____
   - Number 2: _____ Reason: _____

Day 2 – Irrational Numbers & Decimals

Name: _____ **Date:** _____

Bellwork (Think-Pair-Share)

1. List a number that cannot be written as a fraction: _____
2. Explain why it is irrational: _____

Exit Ticket

1. Write one terminating decimal and label it rational: _____
2. Write one repeating decimal and label it rational: _____
3. Write one non-repeating decimal and label it irrational:

    _____

Day 3 – Square Roots & Estimation

Name: _____ **Date:** _____

Bellwork (Think-Pair-Share)

1. Estimate √50 to one decimal place: _____
2. Decide if it is rational or irrational: _____
3. Explain your reasoning: _____

Exit Ticket

1. Estimate √70 to one decimal place: _____
2. Is it rational or irrational? _____
3. Explain your reasoning: _____

Day 4 – Comparing & Ordering Numbers

Name: _____ **Date:** _____

Bellwork (Think-Pair-Share)

1. Circle the bigger number: √12 or 3.5

2. Explain why you chose that number:
   _____

Exit Ticket

1. Order the following numbers from smallest to largest and label each as rational (R) or irrational (I):
   - Set 1: √15, 3.6, 5
     Order: _____ Labels:
     _____
   - Set 2: √28, 5.2, 5.0
     Order: _____ Labels:
     _____
   - Set 3: √35, 6.0, 5.9
     Order: _____ Labels:
     _____

Day 5 – STEM Application: Ferris Wheel Project

Name: _____ **Date:** _____

Bellwork (Think-Pair-Share)

1. Write one circular object in real life that uses π: _____
2. Why is π used in this design? _____

Exit Ticket

1. Reflection: How do irrational numbers help in real-world design, such as Ferris wheels?

2. Identify one number in your Ferris wheel project that is rational:
   _____

3. Identify one number in your Ferris wheel project that is irrational:
   _____