

## Day 7 – Classifying Rational &amp; Irrational Numbers

Name: \_\_\_\_\_

## Practice Assignment

Date: \_\_\_\_\_ Block: \_\_\_\_\_

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**Day 7: Irrational & Rational Numbers**

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Decide whether the following numbers, sums or products yield a number that is rational or irrational. Simplify if necessary and explain for each problem why it is a rational or irrational number.

1.  $1.\overline{233}$

2.  $1.245\dots$

3.  $\frac{3}{5}$

4.  $3\pi$

5.  $\sqrt{5} + \sqrt{7}$

6.  $\sqrt{4} + \sqrt{16}$

7.  $\sqrt{2} \cdot \sqrt{18}$

8.  $\frac{\sqrt{5}}{2} + 3$

9.  $(\sqrt{8} + 4)^2$

10.  $\sqrt{8}(5\sqrt{8} + \sqrt{2})$

11.  $2\sqrt{2}(5 + \sqrt{2})$

12.  $2(\sqrt{5} + \sqrt{7})$

Let  $x$  be a non-zero rational number and  $y$  be an irrational number. Tell whether the following will rational or irrational or both. If both, give an example for each.

13.  $x + y$

14.  $xy$

15.  $y^2$

16.  $x^2$

17.  $x + x$

18.  $y + y$