

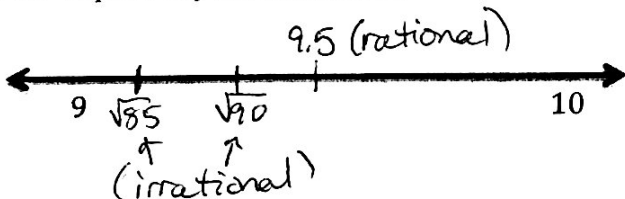
Name Key Per \_\_\_\_\_

8.NS.A.1-2 Rational & Irrational Quiz Study Guide

Use the symbols  $>$ ,  $<$ , or  $=$  to compare the numbers below.

1.  $\sqrt{40} > 6.3$
2.  $\pi > \sqrt{9}$
3.  $-\sqrt{21} < -\sqrt{20}$
4.  $3\pi > 3^2$

5. Create a number line from 9 to 10. Identify and place two irrational numbers and one rational number between 9 and 10. Explain why these numbers are irrational or rational.



6. Which decimal is the equivalent of  $\frac{7}{12}$ ? Circle your answer, then justify it in the space provided.

- A.  $0.58\bar{3}$
- B.  $\overline{0.583}$
- C. 0.583
- D.  $0.58\bar{3}$

$$\begin{array}{r} 0.58333\dots \\ 12 \overline{) 7.000} \\ \underline{-60} \phantom{00} \\ 100 \phantom{0} \\ \underline{-96} \phantom{0} \\ 40 \\ \underline{36} \phantom{0} \\ 4 \dots \end{array}$$

7. Classify each of the numbers below. Circle ALL that apply.

|                 |  |                                     |  |   |   |                                  |
|-----------------|--|-------------------------------------|--|---|---|----------------------------------|
| a. -8           | <input checked="" type="checkbox"/> real | <input type="checkbox"/> irrational | <input checked="" type="checkbox"/> rational | <input checked="" type="checkbox"/> integer | <input type="checkbox"/> whole            | <input type="checkbox"/> natural |
| b. $\sqrt{144}$ | <input checked="" type="checkbox"/> real | <input type="checkbox"/> irrational | <input checked="" type="checkbox"/> rational | <input checked="" type="checkbox"/> integer | <input checked="" type="checkbox"/> whole | <input type="checkbox"/> natural |
| c. 0            | <input checked="" type="checkbox"/> real | <input type="checkbox"/> irrational | <input checked="" type="checkbox"/> rational | <input checked="" type="checkbox"/> integer | <input checked="" type="checkbox"/> whole | <input type="checkbox"/> natural |
| d. 1.576777...  | <input checked="" type="checkbox"/> real | <input type="checkbox"/> irrational | <input checked="" type="checkbox"/> rational | <input type="checkbox"/> integer            | <input type="checkbox"/> whole            | <input type="checkbox"/> natural |
| e. $\sqrt{-52}$ | <input type="checkbox"/> real            | <input type="checkbox"/> irrational | <input type="checkbox"/> rational            | <input type="checkbox"/> integer            | <input type="checkbox"/> whole            | <input type="checkbox"/> natural |

*imaginary! Not real!*

8. Your friend tells you that it is impossible to find  $\sqrt{123}$  because it is irrational. Prove whether they are or are not correct.

$$11+12=23$$

$$\begin{array}{r} \sqrt{121} \\ 4 \\ 11 \end{array}$$

$$\sqrt{123}$$

$$\begin{array}{r} \sqrt{144} \\ 4 \\ 12 \end{array}$$

$$\sqrt{123} = 11\frac{2}{23}$$

9. Complete the table below. Show your work!

| Decimal           | Fraction                             |
|-------------------|--------------------------------------|
| 10. $0.8\bar{3}$  | $\frac{5}{6}$                        |
| $0.\overline{52}$ | 11. $\frac{52}{99}$                  |
| 0.65              | 12. $\frac{65}{100} = \frac{13}{20}$ |