Unit Test: Rational & Irrational Numbers

Name: _____ Date: _____ Period: _____

Directions: *Read each question carefully. Write any formulas used, show all work, and record your final answer in the box to the right to receive full credit.*

1. Which of the following is a rational number? Check all that apply.**(6 points)**

A. π
B. $\sqrt{16}$
C. $17.5\overline{8}$
D. -21
E. $1.278563\ldots$
F. $\frac{2}{5}$

2. Determine whether each fraction is a terminating or repeating decimal. Write the fraction in the correct box in the answer column. **(5 points)**

$\frac{6}{7}$ $\frac{17}{8}$ $\frac{2}{13}$ $\frac{34}{16}$ $\frac{5}{24}$

Match the description with the correct vocabulary word. Write the letter on the lines to the right.

Word Bank

A. Real numbers	D. Irrational numbers
B. Rational	E. Imaginary numbers
C. Integers	F. Terminate

3. A rational number consists of decimals that either repeat or _____.

4. A _____ number can be expressed as $\frac{a}{b}$ where a and b are integers and $b \neq 0$.

5. The numbers that consits of whole numbers, their opposites and zero are defined as _____.

Answers

1. **A** ☐ **D** ☐
B ☐ **E** ☐
C ☐ **F** ☐

2.

Terminating	Repeating

3. _____

4. _____

5. _____

6. Which fractions are equivalent to $1.\overline{27}$? Check all that apply. (6 points)

A. $\frac{9}{7}$

B. $\frac{12}{5}$

C. $\frac{14}{11}$

D. $\frac{28}{19}$

E. $\frac{42}{33}$

F. $\frac{60}{27}$

6. A ☐ **D** ☐
B ☐ **E** ☐
C ☐ **F** ☐

7. Convert $4.\overline{15}$ to a fraction in lowest terms.

7. _____

8. Convert $12.\overline{1}$ to a fraction in lowest terms.

8. _____

9. Look at each square root. Is it a rational or irrational number? Check A for rational and B for irrational.

A. $\sqrt{48}$
B. $\sqrt{12}$
C. $\sqrt{36}$

9A. A ☐ B ☐

9B. A ☐ B ☐

9C. A ☐ B ☐

Write True or False for each statement.

10. $\sqrt{65}$ is between 6 and 7.

11. $\sqrt{105}$ is between 10 and 11.

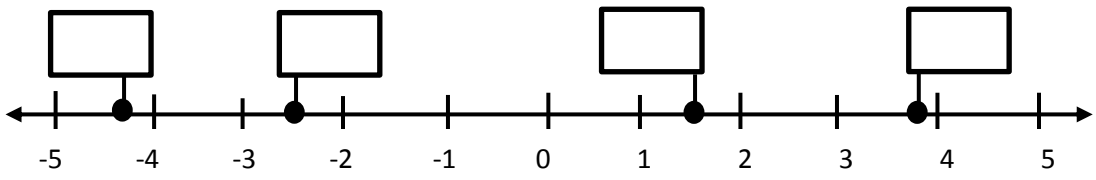
12. $2\sqrt{5}$ is between 4 and 5.

10. _____

11. _____

12. _____

Place the given values on the number line in the appropriate location.

(4 points)

$\frac{\pi}{2}$ $\quad -3\sqrt{2}$ $\quad \sqrt{15}$ $\quad -\sqrt{7}$