Level 4: Irrational Numbers and Integer Exponents Midtest Answer Key

Question 1:

Which of the following is irrational?

   a. .777...

   b. $1.6\overline{6}$

   c. $\sqrt{3}$

   d. $\frac{5}{6}$

Question 2:

What is the value of $\frac{7}{8}$ as a decimal?

0.875

Question 3:

Write $\sqrt{7}$ as a decimal rounded to nearest thousandth.

2.646

Question 4:

Which of the following is a rational number?

   a. $\sqrt{19}$

   b. $\sqrt{69}$

   c. $\sqrt{169}$

   d. $\sqrt{8}$

Question 5:

Write $0.\overline{7}$ as the ratio of two integers.

$$\frac{7}{9}$$

Question 6:

Write $3\frac{5}{9}$ as a decimal rounded to the nearest thousandth.

3.556

Question 7:

What is the greatest integer that is a solution to the following inequality?

$\sqrt{x} < 6$

35

Question 8:

Susan designs a rectangular tote bag to carry a tablet computer. Using the dimensions of the bag, she calculates the tote bag's diagonal to be $10 \times \sqrt{2}$ inches.

Of the measurements of computer diagonals listed below, which is the largest she can put in her bag?

a. 10 in

b. 15 in

c. 20 in

d. 25 in

Question 9:

Use the fractional approximation to write π^3 as a power of the ratio of two integers.

$$(\frac{22}{7})^3$$

Question 10:

Estimate the value of $\sqrt{5} + \sqrt{7}$, rounded to the nearest thousandth.

4.882

Question 11:

Arrange the following numbers in order from least to greatest.
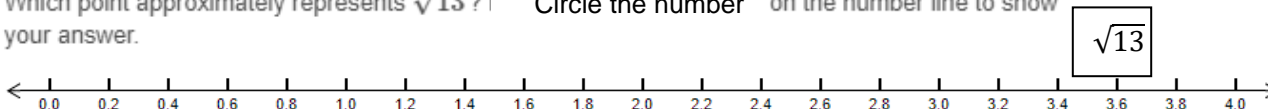
– π^2

– $\sqrt{9}$

– 3.1^2

$\sqrt{9}$
3.1^2
π^2

Continue ➡

Question 12:

Which point approximately represents $\sqrt{13}$? Circle the number on the number line to show your answer.

$$\boxed{\sqrt{13}}$$

```
0.0  0.2  0.4  0.6  0.8  1.0  1.2  1.4  1.6  1.8  2.0  2.2  2.4  2.6  2.8  3.0  3.2  3.4  3.6  3.8  4.0
```
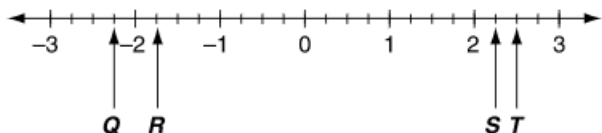
Question 13:

Which of the following **best** describes an irrational number?

   a.   a number that is a square root

   b.   a number that is less than zero

   c.   a number that cannot be approximated by a decimal

   d.   a number that cannot be written as the ratio of two integers

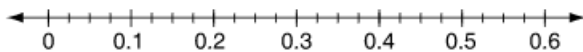**Question 14:**

Look at the number line below.

```
     -3    -2    -1    0    1    2    3
          Q  R              S T
```

Which point best represents the location of $-\sqrt{5}$ on the number line?

   a.   point Q

   b.   point R

   c.   point S

   d.   point T

Question 15:

Look at the number line below.

```
0    0.1    0.2    0.3    0.4    0.5    0.6
```

Which number is located between 0.3 and 0.4 on the number line?

   a. $\sqrt{0.06}$

   b. $\sqrt{0.12}$

   c. $\sqrt{0.25}$

   d. $\sqrt{0.35}$

Continue ➡

Question 16:

Write $1.\overline{6}$ as the quotient of two integers or as a mixed number.

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

Question 17:

Write the number 0.777... as the quotient of two integers.

$$\frac{7}{9}$$

Question 18:

Between what two consecutive integers is the value of $\sqrt{22}$?

between 4 and 5