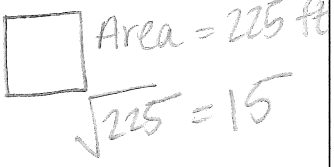
Name: Solutions 8th Grade Math 1st Semester Review Pd: ____

Expressions and the Number System

1. A square rug has an area of 225 square feet. How long is each side of the rug?

   A 15 feet
   B 22.5 feet
   C 23 feet
   D 25 feet



2. Which is an estimate of $\sqrt{14}$ to the nearest hundredth?

   A 1.4
   B 3.7
   C 3.47
   D 3.74

(Calculator)

3. Which rational number is also an integer?

   A $-\frac{82}{6}$ $-13\frac{2}{3}$
   B $-\frac{65}{13} = -5$
   C $\frac{43}{5} = 8.6$
   D $\frac{70}{25} = 2.8$

4. Which statement is false?

   A All whole numbers are integers. T
   B All irrational numbers are real. T
   C Some integers are irrational. F
   D Some integers are whole numbers. T

5. Which of the following are true?

   I. $\sqrt{14} + 6.2 < 3\pi - 8.2$ F
   II. $\frac{17}{5} + \sqrt{64} > 8 + \pi$ T
   III. $35 - \sqrt{40} > 6\pi$ T

   A only I and II
   B only II and III
   C none of them
   D all of them

(calculator)

6. One type of ant is 0.0035 meter long. How is this length expressed in scientific notation?

0.0035

3.5×10^{-3} m

7. The population of a large U.S. city is 2,707,210. How is this population expressed in scientific notation?

2,707,210.

2.70721×10^{6}

8. What is the standard notation for a distance of 9.302×10^{7} miles?

9,302,0000.

93,020,000 miles

9. Classify $\frac{\sqrt{25}}{3}$ as a whole number, integer, rational number, irrational number, or real number. Write all the names that apply.

Rational # ; Real #

$\frac{\sqrt{25}}{3} = \frac{5}{3} = 1.\overline{6}$

10. Matthew builds toy cars for a hobby. He wants to organize his tires by circumference size from least to greatest. The tire sizes, in cm, are listed below. List them in order from least to greatest.

3π cm, $9\frac{3}{4}$ cm, 9.6 cm, $\frac{28}{3}$ cm

9.42 ② 9.75 ④ 9.60 ③ 9.33 ①

$\frac{28}{3}$ cm, 3π, 9.6 cm, $9\frac{3}{4}$ cm

11. Between which two consecutive integers does $\sqrt{45}$ lie?

$\sqrt{45} \sim 6.70$

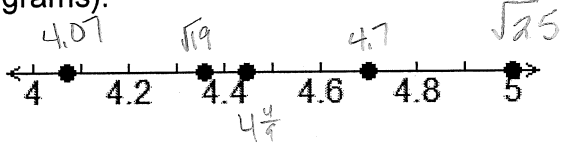
A 5 and 6

B 6 and 7

C 22 and 23

D 44 and 46

12. The number line represents the weights of various rocks from Geology class (in grams).



Which order below represents the weights from least to greatest?

$\sqrt{19} \sim 4.3589$

A $\sqrt{25}$ g, 4.7 g, $\sqrt{19}$ g, $4\frac{4}{9}$ g, 4.07 g

B 4.7 g, $4\frac{4}{9}$ g, $\sqrt{19}$ g, 4.07 g, $\sqrt{25}$ g

C 4.07 g, $4\frac{4}{9}$ g, 4.7 g, $\sqrt{19}$ g, $\sqrt{25}$ g

D 4.07 g, $\sqrt{19}$ g, $4\frac{4}{9}$ g, 4.7 g, $\sqrt{25}$ g

13. Place the following real numbers in the Venn diagram where they belong.

0.00036 -9 2400

$3.6\times10^{-4},\ -\sqrt{81},\ \pi,\ 2.4\times10^{3},\ \sqrt{14}$