→ **Directions: You must show or explain how you found each answer. Answers only will not receive credit.**

8.NS.1

23. Which number is an irrational number?

A) $\sqrt{16}$ B) $\dfrac{2}{7}$ C) $\sqrt{30}$ D) $0.\overline{45}$

Explain how you know.

24. Look at the following seven numbers.

π 13 $\sqrt{169}$ 1/13

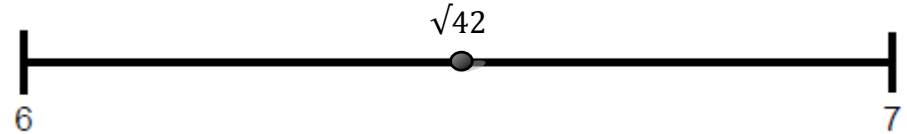.$\overline{13}$ $\sqrt{13}$

0.12345678… $\sqrt{121}$

Write each of the numbers in the table below.

Rational Numbers	Irrational Numbers

8.NS.2

25. Mark a DOT on a number line that best represents the location of $-\sqrt{23}$.

26. On a test, Tracey was asked to plot $\sqrt{42}$ on a number line. She drew the following diagram:

$\sqrt{42}$
6   7

Did Tracey correctly plot $\sqrt{42}$ on the number line? Show or explain how you found your answer.

27. Which list shows the numbers in order from **least** to **greatest**?

A) $\dfrac{2}{7}$, $\sqrt{2}$,   1.7

B)   1.7, $\sqrt{2}$, $\dfrac{2}{7}$

C) $\dfrac{2}{7}$,   1.7, $\sqrt{2}$

D) $\sqrt{2}$, $\dfrac{2}{7}$,   1.7

8.EE.1

Simplify the following expressions.

28. $(j^3)(j^{-7}) = $ _____

29. $\dfrac{k^{10}}{k^5} = $ _____

30. $(m^4)^{-5} = $ _____

Determine the appropriate exponent to make the following statements true.

31. $\dfrac{t^{11} \times t^{10}}{t^7} = (t^{\boxed{?}})^2$

32. $(v^4)^6 = (v^3)^{\boxed{?}}$

8.EE.2

33. Your pet fish needs at least 27000 in.^{3} of open water, and you want your fish tank to be a <u>cube</u>. What are the dimensions of the fish tank you need to purchase?

34. At the Rugs Ragged and Rustic store, one giant rug depicting the discovery of covers one wall. You notice that the rug itself is square and is listed as having an area of 121 ft^2. What is the length of the rug?