

Today's Plan:

Learning Target (standard): I will learn the properties of the number system and accurately describe them.

Students will: Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, take notes over new material and complete practice problems over new concepts.

Teacher will: Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide examples of new concepts and assign students assessment problems over new concepts.

Assessment: Board work, homework check and homework assignment

Differentiation: Students will work at the board, go over and correct homework at their seats, actively engage in lecture over new concepts, practice new concepts with the aid of other students and the teacher and complete homework assignment.

NAME _____

#6

BELL RINGER

1.) Translate the phrase into an algebraic expression.

Two less than the product of eight and a number k

$$8k - 2$$

2.) Is 4 a solution to the inequality $5x + 3 < 24$?

$$5 \cdot 4 + 3 < 24$$

$$20 + 3 < 24$$

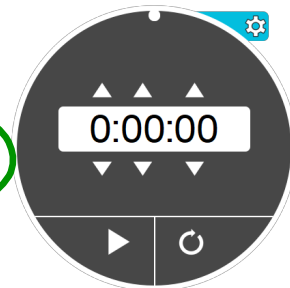
$$23 < 24$$

Yes

3.) Evaluate $22 - 7 - 4$.

$$15 - 4$$

11



$$\begin{aligned} 15) \quad & 4 - -6 \div -2 \cdot 2 - 3 \cdot -5 \\ & \underline{4 + 6} \div -2 \cdot 2 - 3 \cdot -5 \\ & 4 - 3 \cdot 2 - 3 \cdot -5 \\ & 4 - 6 - \underline{3 \cdot -5} \\ & 4 - 6 + 15 \\ & -2 + 15 \\ & \textcircled{13} \end{aligned}$$

$$w - 17$$

$$10^2$$

$$13 - 4$$

$$n - 10$$

Simplify.

$$6 + \underline{9 \cdot 2} - 4$$

$$\underline{6 + 18} - 4$$

$$24 - 4$$

$$\textcircled{20}$$

Simplify.

$$3(\underline{6 - 3}) - 2^3$$

$$3 \cdot 3 - 2^3$$

$$\underline{3 \cdot 3} - 8$$

$$9 - 8$$

$$\textcircled{1}$$

Simplify.

$$10 \cdot 4 - (7 - 2)$$

$$\underline{10 \cdot 4} - 5$$

$$40 - 5$$

$$\textcircled{35}$$

Simplify.

$$\underline{2 \cdot 3} \div 6 \cdot 4$$

$$\underline{6 \div 6} \cdot 4$$

$$1 \cdot 4$$

$$\textcircled{4}$$

$$6 \div 24 \neq 4$$

$$\frac{6}{24} = \frac{1}{4}$$

Simplify.

$$8 + \underline{4^2} \cdot 2 - 6$$

$$8 + \underline{16} \cdot 2 - 6$$

$$\underline{8 + 32} - 6$$

$$40 - 6$$

$$\textcircled{34}$$

The Number System:

- **Natural numbers** - the counting numbers
i.e. 1, 2, 3, 4, 5, ...

\mathbb{N}

- **Whole numbers** - the natural numbers including 0
i.e. 0, 1, 2, 3, 4, ...

whole

- **Integers** - the positive AND negative whole numbers

i.e. ..., -3, -2, -1, 0, 1, 2, 3, ... \mathbb{Z}

- **Rational numbers** - numbers that can be written as fractions in the form of $\frac{m}{n}$, where m and n are integers

i.e. $\frac{3}{4}$, .333333..., 1.25, 7

$$\frac{1}{3}$$

$$\frac{1}{4} \quad \frac{5}{4}$$

$$\frac{14}{2}$$

~~$$\frac{13}{2.4}$$~~

\mathbb{Q}

- decimals that repeat
- decimals that terminate

- **Irrational numbers** - numbers that cannot be written as a fraction

i.e. $\sqrt{2}$, π , 0.12345...., $\sqrt[3]{12}$ "irrational"

- **Real numbers** - all of the above-mentioned numbers

\mathbb{R}

- **Complex numbers** - numbers of the form $a+bi$, where a and b are real numbers, and i is the **imaginary number**

Classify the given number.

-34 integer \mathbb{Z}
rational \mathbb{Q}
real \mathbb{R}

Classify the given number.

$\sqrt{144} = 12$ natural \mathbb{N}
whole
integer \mathbb{Z}
rational \mathbb{Q}
real \mathbb{R}

Assignment:

The Number System #1-16