



Objective: Understanding True and False Equations

Homework SE-1 – The Doctor's True False Equation Handout

Do Now: Solve for x. 1. $2x + 1 = 10$ 2. $-5x = 45$

Exam Prep: Which of the following is an equation?

- A) $x = 1$ B) $10x + 2y^5$ C) $22 > 3x + 5$ D) $x^2 + 2x - 1$



First... a quick check.

What is an expression? Give THREE examples.

Discussion

A **number sentence** is a statement of equality between two numerical expressions.

1. $2 + 3 = 1 + 4$

2. $2 + 3 = 9 + 4$

- Are these number sentences?
- Compare them.

A number sentence is said to be **TRUE** if the value of the expressions are equal, and **FALSE** otherwise. These are **truth values**.

Practice: Are the sentences true or false

1. $4 + 8 = 10 + 5$	2. $(71 \cdot 603) \cdot 5876 = 603 \cdot (5876 \cdot 71)$
3. $\pi = 3.141$	4. $\sqrt{3} \cdot \sqrt{7} = \sqrt{21}$
5. $\sqrt{4} + \sqrt{9} = \sqrt{(4 + 9)}$	6. $\frac{1}{2} + \frac{1}{3} = \frac{5}{6}$

Discussion Two

$$w^2 = 4$$

Let "w" be any real number.

Which value of w makes the number sentence true? Are there more?

Practice: Make the Sentences TRUE

1. $7 + x = 12$. Let $x =$

2. $3r + 300 = 372$. Let $r =$

3. $m^3 = -125$. Let $m =$

4. A number x and its square, x^2 have the same value. Let $x =$

5. The average of 10 and n is -5 . Let $n =$

6. $2a = a + a$. Let $a =$

7. $q + 67 = q + 68$. Let $q =$

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The Doctor's True False Equation Handout

Are the sentences true or false? Show Work.

1. $10 + 2 = 14 + -2$	2. $(10 \bullet 24) \bullet -3 = 10 \bullet (24 \bullet -3)$
3. $10 \bullet 45 = 10 + 45$	4. $\sqrt{2} \bullet \sqrt{14} = \sqrt{28}$
5. $\sqrt{20} + \sqrt{5} = \sqrt{(20 + 5)}$	6. $\frac{1}{4} + \frac{4}{1} = \frac{5}{5}$



Make the Sentences TRUE



1. $10 + x = 0$. Let $x =$
2. $4r - 20 = 80$. Let $r =$
3. $h^3 = 64$. Let $h =$
4. A number x and its cube, x^3 have the same value. Let $x =$
5. The average of 10 and n is 10. Let $n =$
6. $42 + k = k + 40$. Let $k =$