Subtracting Integers

Name:

Date: Period:

A rule for subtraction can be paraphrased (put in to simpler words) as follows:
"Instead of subtracting a number, you can add its opposite."
Once you follow this rule, you can follow the procedures you have learned about addition.

Example 1:

$$5 - 2 = 3$$

$$5 + (-2) = 3$$

$$5 \;+\; (-2) \;=\; 3$$

$$+\;+\;+\;\;\begin{matrix}+ & + \\ - & -\end{matrix}\;\; = \;\; +\;+\;+$$

Example 2:

$$-5 - (-2) = -3$$

$$-5 \;-\; (-2) \;=\; -3$$

$$-\;-\;-\;\;\begin{matrix}- & - \\ + & +\end{matrix}\;\; = \;\; -\;-\;-$$

Or, instead of subtracting ("taking away") -2, you could add a positive 2.

$$-5 + 2 = -3$$

$$-5 \;+\; 2 \;=\; -3$$

$$-\;-\;-\;\;\begin{matrix}- & - \\ + & +\end{matrix}\;\; = \;\; -\;-\;-$$

Example 3:

$$-5 - 2 = -7$$

Or, instead of subtracting a positive 2, add a negative 2.

$$-5 + (-2) = -7$$

$$-5 \;+\; (-2) \;=\; -7$$

$$-\;-\;-\;-\;-\;\;-\;-\;\; = \;\; -\;-\;-\;-\;-\;-\;-$$

Use anything you ***know*** about subtraction to determine the following differences. Apply the rule for changing subtraction into an addition expression, if you think it will help.

1. $18 - 6 =$

2. $105 - 7 =$

3. $-5 - 7 =$

4. $-22 - 33 =$

5. $8 - (-88) =$

6. $23 - (-23) =$

7. $-2 - (-22) =$

8. $-8 - (-88) =$

9. $-20 - (-5) =$

10. $12 - (-36) =$

11. $-100 - (-100) =$

12. $-23 - (-25) =$

13. $-23 - (-25) =$

14. $-201 - (-102) =$

15. By now, you should know that the rule for changing subtraction in to an addition expression works. Does the inverse of the rule work? That is, is the following statement true?

"Instead of adding a number, you could subtract its opposite."

Construct an argument using the expression 6 + (-2), to explain if this inverse rule works or doesn't work.