

Why Are You Flipping Out?



1. Fill in each blank with the appropriate symbol, $<$, $>$, or $=$.

a. 12 _____ 4

b. -6 _____ 2

c. 0 _____ -3

d. -8 _____ -10

e. $2 + (-6)$ _____ $2 + (-4)$

2. Which symbol $<$, $>$, or $=$ makes the statement true:

6 _____ 4

Explain your thinking:

3. Take the above statement, 6 _____ 4 and complete the following operations to both sides, then write the new inequality statement.

Group 1

a. add 2: $6 + 2$ _____ $4 + 2$

c. multiply by 2: $6(2)$ _____ $4(2)$

b. subtract 2: $6 - 2$ _____ $4 - 2$

d. divide by 2: $6 \div 2$ _____ $4 \div 2$

How do the inequality signs in each of the 4 problems above compare with #2, your original problem?

If you add, subtract, multiply or divide both sides of an equation by a positive number, does the inequality sign need to change to still be true?

Group 2

e. add (-2) : $6 + (-2)$ _____ $4 + (-2)$

g. multiply by (-2) : $6(-2)$ _____ $4(-2)$

f. subtract (-2) : $6 - (-2)$ _____ $4 - (-2)$

h. divide by (-2) : $6 \div (-2)$ _____ $4 \div (-2)$

What happened to the inequality sign when you added (-2) to both sides?

What happened to the inequality sign when you subtracted (-2) from both sides?

What happened to the inequality sign when you multiplied both sides by (-2) ?

What happened to the inequality sign when you divided both sides by (-2)?

How do the problems in Group 1 differ from Group 2?

How are they the same?

What is your prediction about what operations, when done to both sides, will require you to change the direction of the inequality sign to keep the statement true?

Fill in the correct inequality sign for each of the situations in the table....

Original Problem	Add (-3) to both sides of	Subtract (-3) from both sides	Multiply both sides by (-2)	Divide both sides by (-1)
$-5 \underline{\hspace{1cm}} 3$				
$0 \underline{\hspace{1cm}} -2$				
$5 \underline{\hspace{1cm}} -1$				
$-8 \underline{\hspace{1cm}} -3$				

Revisit your prediction above about when you need to reverse (flip) the inequality sign. Did your prediction hold true for the problems in the table? Explain your answer.