

(8) (a) > Reason:  $x > 5 \rightarrow x+8 > 5+8 = 13$

\* (b) This problem is wrong: If they

had  $x > 3$ , then the correct answer would have been  $-5x+18 < 3$  because  $x > 3 \rightarrow -5x < -15 \rightarrow -5x+18 < -15+18 = 3$

(9) (a)  $a=1, b=2$   $|a+b| = |1+2| = 3 = |1|+|2|$

(b)  $a=2, b=-1$   $|a+b| = |2+(-1)| = |1| = 1,$

but  $|a|+|b| = |2|+|-1| = 2+1 = 3$

(c) This is impossible because  $|a+b| \leq |a|+|b|$  holds for all numbers

(d) This is always true so it will hold for any real numbers you choose. For example, the numbers in (a) or (b) will work.

(10) No: For example  $-4 < 2$ , but  $(-4)^2 = 16 > 2^2 = 4$ .

(11) YES: Proof:  $a < b \rightarrow -a > -b \rightarrow -a+c > -b+c$   
OR  $c-a > c-b$  OR  $c-b < c-a$ .