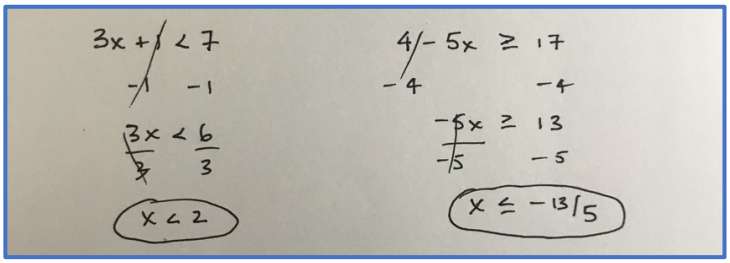
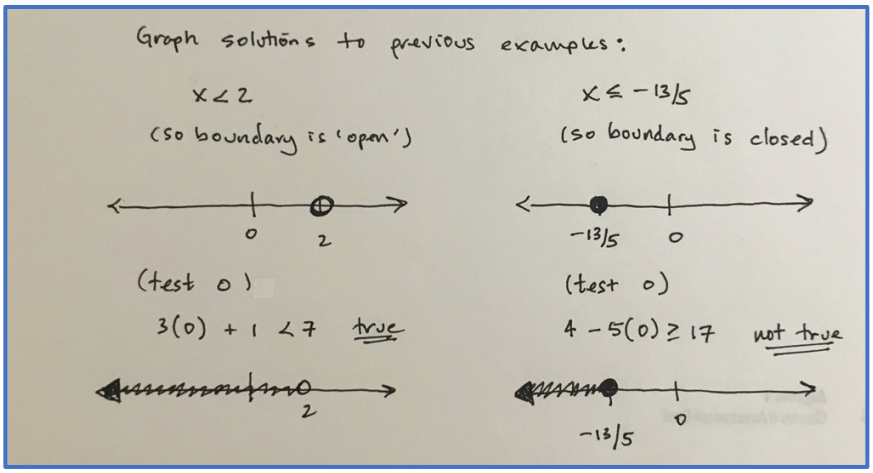
SRHS - Math I

Solving & Graphing Inequalities - Notes

- When solving an inequality, begin as if you are solving an equation, except...
  - You need to keep track of the direction of the inequality. If you multiply or divide each side of the inequality by a negative number, change the direction of the inequality.
  - Otherwise, solving an inequality is just like solving an equation.
- As with equations, show you work one step at a time. This is not something that you do just to make your math teacher happy, but an important part of working the problem correctly (math teachers show their work when solving equations even if students aren't looking because we know it's the best way to do the problem correctly). For example:



- When graphing inequalities there are two issues to keep track of:
  - Decide if the boundary point is drawn "open" (donut or bagel) or "closed" (cookie or rice cake). If the inequality sign is either < or > the point is drawn open and if the inequality sign is either ≤ or ≥ the point is drawn closed.
  - Determine which direction to shade. There are several strategies for how to do this, but one that is simple and reliable is to test a point. Select a point (that is not the boundary point) and test it in the original inequality and if it works (makes a true statement) shade that side. If it doesn't work (doesn't make a true statement) don't shade that side – shade the other one. For example...



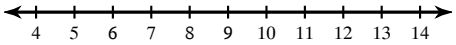
2020 - Review #3 Name_____

SRHS Math 1

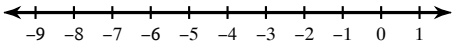
Date_____ Period____

Solve each inequality and graph its solution.

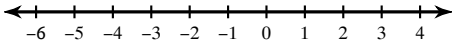
1) $3 \geq \frac{b}{2}$



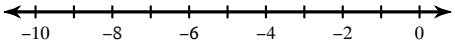
2) $5 + k \geq 1$



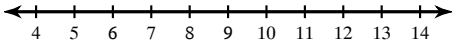
3) $-5 - b \geq -7$



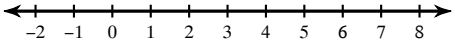
4) $8 \geq -2x$



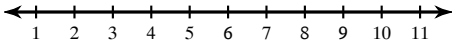
5) $5 > 2 + \frac{n}{3}$



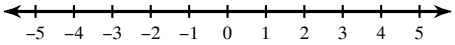
6) $-2(9 + n) < -20$



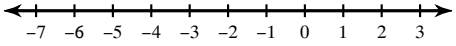
7) $-2 - 5n + 6n < 4$



8) $m + m \geq -4$



9) $-9 - x \geq 2(x + 3)$



10) $-3(5 + 2k) > 5k + 18$