

Grade 8 Mathematics Worksheet

Inequalities and equations

Questions:

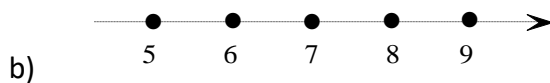
1. a) Solve for x if $2(2x - 6) \geq x + 3$

 b) Draw a graph that represents the solution where x is an integer
2. If $5x - 3 = 12$, find the value of $2x + 7$

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Solution

$$\begin{aligned}
 1. \quad a) \quad & 2(2x-6) \geq x+3 \\
 & \therefore 4x-12 \geq x+3 \quad (\text{Distributive property}) \\
 & \therefore 4x-x \geq 3+12 \quad (\text{Like terms collected}) \\
 & \therefore 3x \geq 15 \\
 & \therefore x \geq 5
 \end{aligned}$$



$$\begin{aligned}
 2. \quad & 5x-3=12 \\
 & \therefore 5x=12+3 \\
 & \therefore 5x=15 \\
 & \therefore x=3
 \end{aligned}$$

Multiple approaches to this problem should be encouraged by educators, as these all come with their own representations and algorithms.

Learners can use the original diagrams and indicate where the solution comes from too. This type of question should become more procedural (basic skill) as learners progress.

Question 2 can be solved graphically too where the two graphs are sketched, according to scale, and then answers are read off graphically. Educators should encourage both representations.