

7. Solve $7 < \frac{1}{2}x$.

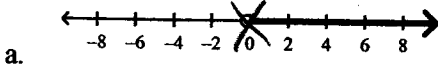
- a. $x < 3.5$
- b. $x < 14$
- c.** $x > 14$
- d. $x > 3.5$

$$7 \times 2 < x$$

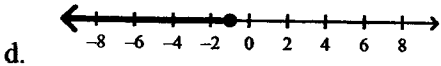
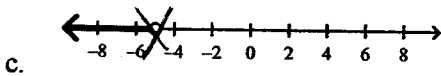
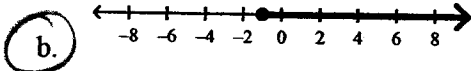
$$14 < x$$

$$x > 14$$

8. Determine which number line represents the solution to $n - \frac{2}{3} \geq \frac{-5}{3} + \frac{2}{3}$



$$n \geq -\frac{3}{3} \Rightarrow 1$$



9. What is the solution to $6 - 2x > 4$?

- a. $x > 1$
- b.** $x < 1$
- c. $x < 4$
- d. $x > 4$

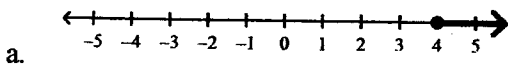
$$-6 \quad -6$$

$$-2x > -2$$

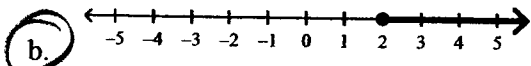
$$\frac{-2x}{-2} > \frac{-2}{-2}$$

$$x < 1$$

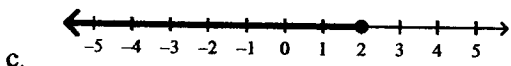
10. Which number line represents the solution to $10 - 6c \leq 2(c - 3)$?



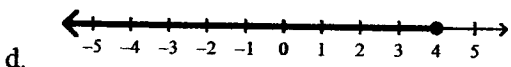
$$\frac{10 - 6c \leq 2c - 6}{-2c \quad -2c}$$



$$\frac{10 - 8c \leq -6}{-10 \quad -10}$$



$$\frac{-8c \leq -16}{-8 \quad -8}$$



$$c \geq 2$$

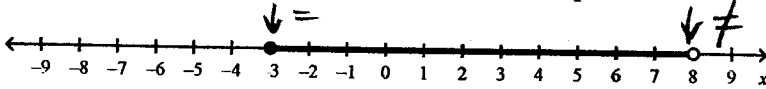
Short Answer

11. What is the difference between $x < 5$ and $x \leq 5$? Explain your answer in terms of the boundary points.

$x < 5$ does not include 5

$x \leq 5$ does include 5

12. The solution to an inequality is shown below. Represent the solution verbally and algebraically.



verbal *a number greater or equal than 3
but less than 8*

algebraic

$$3 \leq x < 8$$

13. On Saturdays, Sports Galore sells 32 more pairs of running shoes than on any other day of the week. The store has never sold more than 104 pairs of running shoes in one day.

a) What inequality represents this situation?

$$d + 32 \leq 104$$

b) How many pairs of running shoes could have been sold on any other day of the week?

$$\begin{array}{r} -32 \\ -32 \end{array}$$

$$d \leq 72$$

14. A triangle has side lengths $2x + 1$, $2x + 3$, and $2x - 2$. What values of x give the triangle a perimeter of 44 or more?

work

$$\underbrace{2x+1}_{m} + \underbrace{2x+3}_{m} + \underbrace{2x-2}_{m} \geq 44$$

$$\begin{array}{r} 6x + 2 \geq 44 \\ -2 \quad -2 \end{array}$$

answer

$$\begin{array}{r} 6x \geq 42 \\ \hline 1x \geq 7 \end{array}$$

↑ Add All sides

Problem

15. Julia must keep her cell-phone bill below \$65 per month. The basic charge is \$25 and it costs her \$3 per min for long-distance phone calls.

a) What inequality can be used to determine how many long-distance minutes Julia can afford?

$$25 + 3m < 65$$

b) How many minutes of long-distance phone calls can Julia make?

$$\begin{array}{r} -25 \\ -25 \end{array}$$

$$3m < 40$$

$$m < \frac{40}{3} \Rightarrow 13.\bar{3}$$

3

*She can make 13 mins.
of calls*

16. Mochan Electric bought 3.8 m of copper wire. After some of the wire was used, more than 2.3 m remained. How much wire was used?

work

$$\begin{array}{r} 3.8 - w > 2.3 \\ -3.8 \quad -3.8 \\ \hline -w > -1.5 \\ \hline w > 1.5 \end{array}$$

answer

more than 1.5 m used

17. Cho needs to buy flashlight batteries for a camping trip. The batteries cost \$1.85 each. If Cho has \$10.00 to spend, how many batteries can he buy?

work

$$\begin{array}{l} 1.85b \leq 10 \\ b \leq \frac{10}{1.85} \Rightarrow 5.4 \end{array}$$

answer

Can buy up to 5 batteries

18. Collin weighs 20 kg more than Huang. Together they weigh at least 177 kg. What is Collin's least possible weight?

work

$$\begin{array}{l} \text{Huang} = H \\ \text{Collin} = H + 20 \end{array}$$

$$H + H + 20 \geq 177$$

$$2H + 20 \geq 177$$

$$2H \geq 157$$

$$H \geq 78.5$$

answer

Collin more than 98.5 kg

$$H + 20 = 98.5$$