

Name: _____

Chapter 6 Unit Exam: Equations and Inequalities

1. Solve the following. Show all steps clearly.

a) $x + 5 = -4$ $x =$ b) $r - 3 = 4$ $r =$

c) $-3 + j = 21$ $j =$ d) $3 = n + 5$ $n =$

2. Solve the following. Show all steps clearly.

a) $2j = 6$ $j =$ b) $25x = -50$ $x =$

c) $3r = 27$ $r =$ d) $44 = -4n$ $n =$

3. Solve the following. Show all steps clearly.

a) $8 = \frac{x}{4}$ $x =$ b) $\frac{x}{2} = 4$ $x =$

c) $\frac{x}{3} = 6$ $x =$ d) $\frac{x}{2} = 5$ $x =$

4. Solve the following. Show all steps clearly.

a) $2x = 2 + 4x$ $x =$ b) $5x + 2x = 35$ $x =$

c) $-3 + j = -6j + 18$ $j =$ d) $6n - 10 = n + 5$ $n =$

5. Solve the following. Show all steps clearly.

a) $2(x + 1) = -4$ $x =$ b) $2(x + 4) = 14$ $x =$

c) $2(4x - 5) = -2x + 2$ $x =$ d) $12 + x = 3(x + 2)$ $x =$

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6. Solve the following. Show all steps clearly.

a) $-2x - 9 = \frac{x}{4}$ $x =$

b) $\frac{x}{2} = 7 - 3x$ $x =$

c) $\frac{x}{3} - 4 = \frac{2x}{3}$ $x =$

d) $\frac{1}{4}x = 3 - \frac{3}{4}x$ $x =$

7. When solving the following equation, Mme Cross got the answer $x = 2$. Is she correct?
Write the correct answer in the box.

Mme Cross's solution.

$$2x + 3 = 7^3$$

$$\begin{array}{r} \underline{2x} = \underline{4} \\ 2 \quad 2 \\ x = 2 \end{array}$$

Correct answer:

$$x =$$

8. A rectangle has a perimeter of 30. The length of the rectangle measures $2x + 2$. What is the width of the rectangle? Label the diagram. * Perimeter = $L + L + W + W$

length =

width =

width =

9. A cab company charges a flat fee of \$2.40 plus \$1.25 for every kilometer. Mme Cross took a cab from her house to the airport. It cost her \$24. How many kilometers did Mme Cross travel in the cab?

a) Create an equation. Use variable x.

b) Solve the equation:

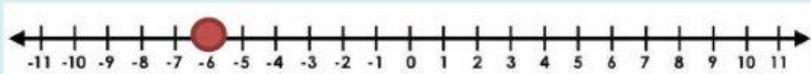
$$x =$$

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10. Solve each equation and match it to its graph.

a) $6b + 5 = 2b - 7$

$b =$



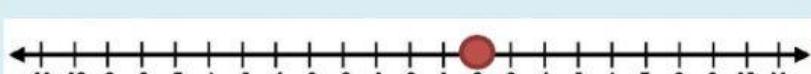
b) $2w + 4 = -4 + w$

$w =$



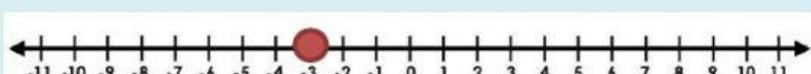
c) $\frac{1}{2}x + \frac{3}{2} = \frac{5}{2}$

$x =$



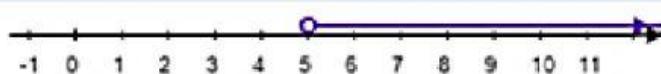
d) $\frac{2}{3} = \frac{1}{3}x - \frac{6}{3}$

$x =$

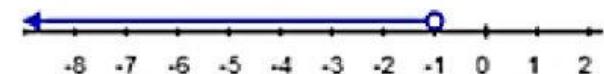


11. Write the inequality that is represented by each graph.

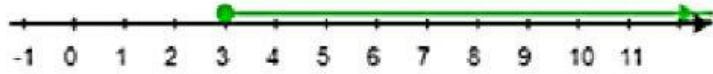
a)



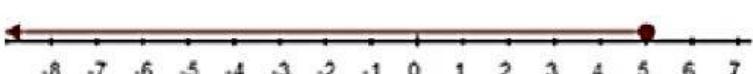
b)



c)



d)



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12. Solve each inequality. Show all steps in your work. Match each solution to its graph.

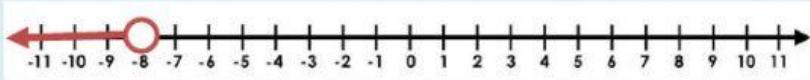
a) $9 - y > 5$

$y =$



b) $\frac{h}{4} \geq 6 + h$

$h =$



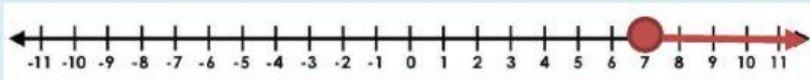
c) $-3(d + 3) \leq 6$

$d =$



d) $4x + 2 \leq 6x - 12$

$x =$



13. Tasha cannot spend more than \$30 a month on her cell phone. If a cell phone plan charges \$12.25 per month plus \$0.25 per minute talking time, determine how many minutes she is able to talk and not spend more than \$30 a month.

a) Write an inequality to model this problem. Use variable x.

b) Solve the inequality.

x