

$$\begin{aligned}
 12. \quad 2w + 2h + 3 &= 70 \\
 28 + 2h + 3 &= 70 \\
 2h + 31 &= 70 \\
 \quad \quad -31 \quad -31 & \\
 \hline
 2h &= 39 \\
 \frac{2h}{2} &= \frac{39}{2} \\
 h &= 19.5 \text{ in}
 \end{aligned}$$

One, None, All Solutions

Solve all equations. Show all your work clearly and circle your answer. Some equations may have one solution, no solution, or All Real Numbers (infinite solutions). **Hint: If you solved all ten problems correctly 3 questions will have no solution, 3 questions will have infinite solutions, and the sum of the remaining solutions is 6.**

1. $2n + 4 = 4 - 4n$ $x=0$
2. $3n - 6 = n + 4$ $x=5$
3. $-2 - 7r = -1 - 7r$ No
4. $1 + 4x = -4 + 4x$ No

5. $13 - 7r = 4 + 2r$ $x=1$
6. $-5 - 7n = -7n + 3$ No
7. $4x - 6 = -6 - 4x$ $x=0$
8. $n + 5 = n + 7 - 3 + 1$ all

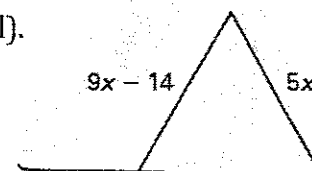
9. $7 + 4b - 4b = 7 + 5b - 5b$ all
10. $n + 1 = n + 1$ all

Word Problems: Write an algebraic model whenever possible then solve. If you get stumped try drawing a picture or rewriting the problem.

11. A It takes 70 inches of ribbon to make a bow and wrap the ribbon around a box. The bow takes 3 inches of ribbon. The width of the box is 14 inches. What is the height of the box?

12. Find the value of x for the equilateral triangle (all sides are equal). Then find its perimeter.

$$\begin{aligned}
 9x - 14 &= 5x + 38 \\
 -5x \quad -5x & \\
 \hline
 4x - 14 &= 38 \\
 +14 \quad +14 & \\
 \hline
 4x &= 52 \\
 \frac{4x}{4} &= \frac{52}{4} \\
 x &= 13
 \end{aligned}$$



Solving with Fraction Coefficients A

Two - Step Solving:

One-Step Solving:

$1) \frac{1}{2}x = 8$ $2(\frac{1}{2}x = 8) \cdot 2$ $x = 16$	<u>$x = 14$</u>
$2) \frac{1}{3}x = 10$ $3(\frac{1}{3}x = 10) \cdot 3$ $x = 30$	<u>$x = 30$</u>
$3) \frac{2}{3}x = 16$ $\frac{3}{2}(\frac{2}{3}x = 16) \cdot \frac{3}{2}$ $x = 48/2 = 24$	<u>24</u>
$4) \frac{5}{3}x = 14$ $\frac{3}{5}(\frac{5}{3}x = 14) \cdot \frac{3}{5}$ $x = 42/5 = 8.4$	<u>$x = \frac{70}{3}$</u>

$5) \frac{1}{2}x - 6 = -1$ $+6 \quad +6$ $2(\frac{1}{2}x = 5) \cdot 2$	<u>$x = 10$</u>
$6) \frac{1}{3}x - 2 = 3$ $+2 \quad +2$ $3(\frac{1}{3}x = 5) \cdot 3$	<u>$x = 15$</u>
$7) \frac{2}{3}x - 2 = 10$ $+2 \quad +2$ $3(\frac{2}{3}x = 12) \cdot \frac{3}{2} = 36/2 = 18$	<u>$x = 18$</u>
$8) \frac{3}{5}x - 35 = -5$ $+35 \quad +35$ $\frac{5}{3}(\frac{3}{5}x = 30) \cdot \frac{5}{3} = 50$	<u>$x = 50$</u>