

Chapter 3 Review #1 (equations)

Solve AND CHECK! Show work clearly. Circle solution.

DO NOT FORGET TO CHECK!!

$$1) -13 + \frac{x}{2} = -7$$

$$\begin{array}{r} +13 \quad +13 \\ \hline \cancel{2} \cdot \frac{x}{2} = 6 \cdot 2 \\ \boxed{x=12} \end{array}$$

C:  $-13 + \frac{12}{2} = -7$   
 $-13 + 6 = -7$   
 $-7 = -7 \checkmark$

$$2) \frac{x}{11} - 10 = -12$$

$$\begin{array}{r} +10 \quad +10 \\ \hline \cancel{11} \left( \frac{x}{11} \right) = (-2) \cdot 11 \\ \boxed{x=-22} \end{array}$$

C:  $-\frac{22}{11} - 10 = -12$   
 $-2 - 10 = -12$   
 $-12 = -12 \checkmark$

$$3) 7x - 3x = 4x + 2x - 4$$

$$\begin{array}{r} 4x = 6x - 4 \\ -6x \quad -6x \\ \hline -2x = -4 \\ \frac{-2x}{-2} = \frac{-4}{-2} \\ \boxed{x=2} \end{array}$$

simplify BOTH SIDES

$$4) 7 + x - x = 6 + 1 + 3x + 4x$$

$$\begin{array}{r} 7 = 7x + 7 \\ -7 \quad -7 \\ \hline 0 = 7x \\ \frac{0}{7} = \frac{7x}{7} \\ \boxed{x=0} \end{array}$$

NOTICE THE VARIABLE HAS NOT DROPPED OUT

C:  $7(2) - 3(2) = 4(2) + 2(2) - 4$   
 $14 - 6 = 8 + 4 - 4$   
 $8 = 8 \checkmark$

C:  $7 + 0 - 0 = 6 + 1 + 3(0) + 4(0)$   
 $7 = 7 \checkmark$

$$5) -7 + 6x = -(3 - 6x)$$

$$\begin{array}{r} 6x - 7 = -3 + 6x \\ -6x \quad -6x \\ \hline -7 = -3 \end{array}$$

Therefore  $-7 \neq -3$   
 $\boxed{x = \text{NO SOLUTION}}$

$$6) 3(4 - 4x) = -28 - 2x$$

$$\begin{array}{r} 12 - 12x = -2x - 28 \\ +12x \quad +12x \\ \hline 12 = 10x - 28 \\ +28 \quad +28 \\ \hline 40 = 10x \\ \frac{40}{10} = \frac{10x}{10} \\ \boxed{x=4} \end{array}$$

C:  $3(4 - 4(4)) = -28 - 2(4)$   
 $3(4 - 16) = -28 - 8$   
 $3(-12) = -36$   
 $-36 = -36 \checkmark$

Tip: check  $x=1$   $\Rightarrow -7 + 6(1) = -(3 + 6(1))$   
 $-7 + 6 = -(9)$   
 $-1 \neq -9$  Good - I did NOT check

$$7) 4 + b - 6 + 7 = -3b + 5 + 4b$$

$$\begin{array}{r} b + 5 = b + 5 \\ -b \quad -b \\ \hline \end{array}$$

therefore

$$5 = 5$$

$$\boxed{B = \text{NO SOLUTION}}$$

$$9) -7(x-1) + 4(x+6) = 6x + 7 + x - 6$$

$$-7x + 7 + 4x + 24 = 7x + 1$$

$$\begin{array}{r} -3x + 31 = 7x + 1 \\ +3x \quad +3x \\ \hline \end{array}$$

$$\begin{array}{r} 31 = 10x + 1 \\ -1 \quad -1 \\ \hline \end{array}$$

$$\begin{array}{r} 30 = 10x \\ 10 \quad 10 \\ \hline \end{array} \quad \boxed{X = 3}$$

$$\begin{aligned} C: -7(3-1) + 4(3+6) &= 6(3) + 7 + 3 - 6 \\ -7(2) + 4(9) &= 18 + 10 - 6 \\ -14 + 36 &= 28 - 6 \\ 22 &= 22 \checkmark \end{aligned}$$

$$11) 5(x-6) = -6x + 5(3x+2)$$

$$5x - 30 = -6x + 15x + 10$$

$$\begin{array}{r} 5x - 30 = 9x + 10 \\ -5x \quad -5x \\ \hline \end{array}$$

$$\begin{array}{r} -30 = 4x + 10 \\ -10 \quad -10 \\ \hline \end{array}$$

$$\begin{array}{r} -40 = 4x \\ -4 \quad 4 \\ \hline \end{array} \quad \boxed{X = -10}$$

$$\begin{aligned} C: 5(-10-6) &= -6(-10) + 5[3(-10) + 2] \\ 5(-16) &= 60 + 5(-28) \\ -80 &= 60 - 140 \\ -80 &= -80 \checkmark \end{aligned}$$

$$8) -9 + x - 6x = -7 - x + 10 + 2x$$

$$\begin{array}{r} -5x - 9 = x + 3 \\ +5x \quad +5x \\ \hline \end{array}$$

$$\begin{array}{r} -9 = 6x + 3 \\ -3 \quad -3 \\ \hline \end{array}$$

$$\begin{array}{r} -12 = 6x \\ 6 \quad 6 \\ \hline \end{array} \quad \boxed{X = -2}$$

$$\begin{aligned} C: -9 + (-2) - 6(-2) &= -7 - (-2) + 10 + 2(-2) \\ -11 + 12 &= 12 - 7 - 4 \\ 1 &= 1 \checkmark \end{aligned}$$

$$10) x - 4 + 5 + 8x = -(x-5) + 4(-4+2x)$$

$$9x + 1 = -x + 5 - 16 + 8x$$

$$\begin{array}{r} 9x + 1 = 7x - 11 \\ -7x \quad -7x \\ \hline \end{array}$$

$$\begin{array}{r} 2x + 1 = -11 \\ -1 \quad -1 \\ \hline \end{array}$$

$$\begin{array}{r} 2x = -12 \\ 2 \quad 2 \\ \hline \end{array}$$

$$\boxed{X = -6}$$

$$\begin{aligned} C: -6 - 4 + 5 + 8(-6) &= -(-6-5) + 4(-4+2(-6)) \\ -10 + 5 - 48 &= -(-11) + 4(-4-12) \\ -53 + 5 &= 11 + 4(-16) \\ -53 &= 11 - 64 \\ -53 &= -53 \checkmark \end{aligned}$$