

Name: \_\_\_\_\_

Key

UNIT 3 ASSESSMENT REVIEW PreAP  
SOLVING EQUATIONS

Solve the following equations. Check your work with a calculator.

1. 
$$\frac{-4}{y+2} = \frac{6}{y-4}$$

$$-4y + 16 = 6y + 12$$

$$\frac{4}{16} = \frac{10y}{100}$$

$$\boxed{0.4 = y}$$

2. 
$$3x - (2x - 5) = -2x + 9 - 4x$$

$$3x - 2x - 5 = -2x + 9 - 4x$$

$$x - 5 = -6x + 9$$

$$+6x \quad +5 \quad +6x + 5$$

$$\frac{7x}{7} = \frac{14}{7}$$

$$\boxed{x = 2}$$

3. 
$$\frac{3}{4}(8x - 16) = \frac{1}{5}(40 - 10x)$$

$$6x - 12 = 8 - 2x$$

$$+2x \quad +12 \quad +12 \quad +2x$$

$$\frac{8x}{8} = \frac{20}{8}$$

$$\boxed{x = 2.5 \text{ or } \frac{5}{2}}$$

4. 
$$-3(3 - x) + 4(x - 2) = 8x - 5$$

$$-9 + 3x + 4x - 8 = 8x - 5$$

$$7x - 17 = 8x - 5$$

$$-7x \quad +5 \quad -7x + 5$$

$$\frac{-12}{-12} = \frac{x}{x}$$

$$\boxed{-12 = x}$$

5. 
$$5(3x - 4) - 3.5 = 7x - 2.5$$

$$15x - 20 - 3.5 = 7x - 2.5$$

$$15x - 23.5 = 7x - 2.5$$

$$-7x \quad +23.5 \quad -7x + 23.5$$

$$\frac{8x}{8} = \frac{21}{8}$$

$$\boxed{x = 2.625}$$

6. 
$$\frac{3}{5}x + 7 = 10$$

$$\frac{3}{5}x = 3$$

$$\frac{3}{3} \cdot \frac{3}{5}x = 3 \cdot \frac{5}{3}$$

$$\frac{3}{5}x = 5$$

$$\boxed{x = 5}$$

Tell what was performed for each step

7. Step 1:  $6m + 8 = m + 23$

step 1: Subtract m from each side

Step 2:  $5m + 8 = 23$

step 2: Subtract 8 from both sides

Step 3:  $5m = 15$

step 3: Divide both sides by 5

Step 4:  $m = 3$

step 4: Answer

Simplify:

8.  $\frac{2}{3}(6x-9y) + \frac{3}{4}(-8x+4y)$

$4x - 6y - 6x + 3y$  CRT

$-2x - 3y$

9.  $Ax + By = C$ , Solve for y

$\frac{By}{B} = \frac{C - Ax}{B}$

$y = \frac{C - Ax}{B}$

10. If  $(x, -5)$  is a solution to  $3x + 4y = -29$ ,

What is the value of x?

$3x + 4(-5) = -29$  simplify

$3x - 20 = -29$   
 $+20 \quad +20$

$3x = -9$

$x = -3$

11. Olivia purchases a DVD movie priced at x dollars. The sales tax is 6.5%.

a. Write an expression to represent the total cost of the movie.

$x + 0.065x$

b. If the movie is priced at \$21.99, what is the total price of the movie, including tax?

$T = (21.99) + 0.065(21.99)$

$T = \$23.42$

12. A model airplane flies 18 feet in 2 seconds. How many feet does it fly in one hour?

$\frac{ft}{sec}$

~~$\frac{18}{2} = \frac{x}{3600}$~~

$2x = 64800$

$x = 32,400$   
ft

1 hr = 60 min

1 min = 60 sec.

13. Coach Torres wants to purchase football t-shirts for his team. The printing company charges \$300 dollars for the first 30 t-shirts. The charge for additional shirts is six times the difference between the number of shirts and 30.

$$+ \quad 6 \cdot (t - 30)$$

a. Write an equation that Coach Torres can use to determine  $t$ , the number of shirts he can buy if he spends  $c$  dollars.

$$c = 300 + 6(t - 30)$$

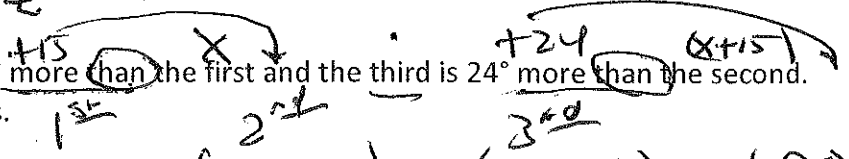
b. If Coach Torres has \$660 in his budget, how many t-shirts can he buy?  $c = 660$

$$\begin{aligned} 660 &= 300 + 6(t - 30) \\ 660 &= 300 + 6t - 180 \quad \text{CLT} \\ 660 &= 120 + 6t \\ \frac{660}{6} &= \frac{120 + 6t}{6} \\ 110 &= 20 + t \\ 90 &= t \end{aligned}$$

**90 t-shirts**

14. In a triangle, the second angle is  $15^\circ$  more than the first and the third is  $24^\circ$  more than the second.

Ans: Find the measure of all three angles.



- 1.  $x$
- 2.  $x + 15$
- 3.  $(x + 15) + 24$   
 $x + 39$

$$x + (x + 15) + (x + 39) = 180 \quad \text{CLT}$$

$$\begin{array}{r} 3x + 54 = 180 \\ \underline{-54} \quad \underline{-54} \\ 3x = 126 \\ \underline{\quad} \quad \underline{\quad} \\ x = 42 \end{array}$$

- 1. **42°**
- 2.  $(42 + 15) =$  **57°**
- 3.  $(42 + 39) =$  **81°**

