

## Warm Up:

1.  $(-3)^2 - 16/4 + (3 - 2)$

2. Solve:  $2(x + 3) - 4x = 28$

3. What is the value of x:  $\frac{x}{-2} + 13 = 15$

4. Solve:  $3x + 2x - 10 = -30$

## Warm-up

$$1) \left( \frac{3}{5}x + \frac{4}{6} = 15 \right) 30 \quad \frac{18x = 430}{\frac{18}{18}}$$
$$18x + 20 = 450$$
$$\boxed{x = 23.9}$$

$$2) \frac{x+3}{4} - 2 = 20 \quad \left( \frac{x+3}{4} = 22 \right) 4$$
$$x+3 = 88$$
$$\boxed{x = 85}$$

$$3) \frac{3}{4}x - 10 = 20$$
$$\frac{3}{4}x = 30$$
$$\boxed{x = 40}$$

$$4) \frac{1}{2} \left( \frac{3}{4}x - \frac{4}{3} \right) + \frac{1}{3} \left( \frac{1}{4}x \right) = -7$$

-19.6

$$4) \frac{1}{2} \left( \frac{3}{4}x - \frac{4}{3} \right) + \frac{1}{3} \left( \frac{1}{4}x \right) = -7$$

$$24 \left( \frac{3^3}{8}x - \frac{4^4}{6} + \frac{1^2}{12}x = -7 \right)$$

$$x = \frac{9}{11}$$

$$9x - 16 + 2x = -7$$

$$\frac{11x}{11} = \frac{9}{11}$$

$$11x - 16 = -7$$

$$\underline{\quad +16 \quad +16 \quad}$$

$$x = 0.\overline{81}$$

$$x \approx 0.8$$

$$\underline{.375x} - .625 + \underline{.0825x} = -7$$

14.7

$$.4575x - .625 = -7$$

14.72

$$x = 41.9$$

$$7 - \frac{5}{2}(8r - 6) + 2r = 32 \quad (9)$$

$$7 - 20r + 15 + 2r = 32$$

$$\begin{array}{r} 22 - 18r = 32 \\ -22 \qquad \qquad -22 \\ \hline \end{array}$$

$$\begin{array}{r} -18r = 10 \\ \hline -18 \quad -18 \end{array}$$

$$r = -\frac{5}{9} = -\bar{.5}$$

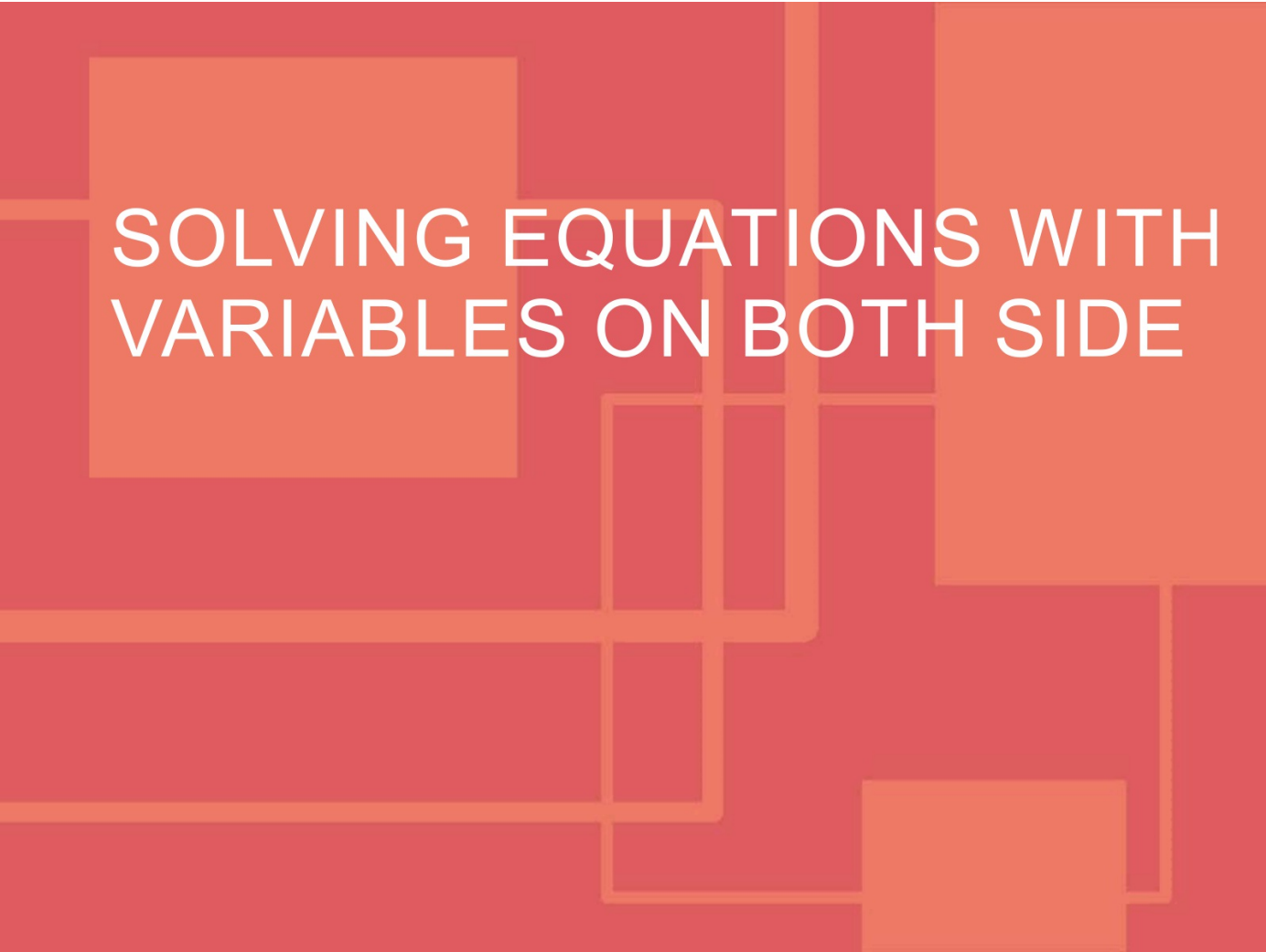
$$5(2n-3) - (n+8) = 13$$

$$10n - 15 - n - 8 = 13$$

$$\begin{array}{r} 9n - 23 = 13 \\ + 23 \quad + 23 \\ \hline \end{array}$$

$$\frac{9n}{9} = \frac{36}{9}$$

$$\boxed{n=4}$$



# SOLVING EQUATIONS WITH VARIABLES ON BOTH SIDE

## Steps to follow:

1. Use the Distributive Property when necessary.
2. Combine Like Terms on the same side of the equal sign.
- \* 3. Eliminate one variable by (smaller coeff.) using the inverse operation.
4. Solve the equation by using ~~using~~ the inverse operation.

## Example #1

$$+4x - 7 = 5 + 7x$$

$$\begin{array}{r} -4x \qquad \qquad \qquad -4x \\ \hline \end{array}$$

$$-7 = 5 + 3x$$

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

$$\begin{array}{r} -12 = 3x \\ \hline \end{array}$$

$$\begin{array}{r} 3 \qquad \qquad 3 \\ \hline \end{array}$$

$$\textcircled{-4 = x}$$



## Example #2

$$1 + 5x + 1 = x + 6$$

$$5x + 2 = x + 6$$

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

$$4x + 2 = 6$$

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

$$\frac{4x}{4} = \frac{4}{4}$$

$$x = 1$$

### Example #3

CLT

MV

IO

"

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

$$-1x + 4 = -4 + x$$

$$\begin{array}{r} +1x \qquad \qquad \qquad +1x \\ \hline \end{array}$$

$$4 = 2x - 4$$

$$\begin{array}{r} +4 \qquad \qquad \qquad +4 \\ \hline \end{array}$$

$$\frac{8}{2} = \frac{2x}{2}$$

$$4 = x$$

Example #4

DP

CLT

MV

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

$$4x - 20 + 2 = x + 3$$

$$4x - 18 = x + 3$$

$$\underline{-4x}$$

$$\underline{-4x}$$

$$-18 = -3x + 3$$

$$\underline{-3} \quad \underline{-3}$$

$$\underline{-21} = \underline{-3x}$$

$$\underline{-3} \quad \underline{-3}$$

$$x = 7$$

# Classwork

Fold your construction paper and make 8 sections on each side.

Solve one problem in each box, use a different color for each step.

Example:

$$\begin{array}{r} 2x + 10 = 30 \\ -10 \quad -10 \\ \hline 2x = 20 \\ \frac{2x}{2} = \frac{20}{2} \\ x = 10 \end{array}$$

Tips: Work in pencil first, write all problems down before you start solving.

## Classwork:

1.  $4x - 5 + 2x = 9x - 8$

2.  $(g + 4) - 3g = 1 + g$

3.  $2r - (5 - r) = 13 + 2r$

4.  $\frac{2}{3}x - 6 = 2$

5.  $\frac{1}{2}(4x + 10) - 2x = 16$

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

7.  $3x + 10 - 5x - 8 = 6$

8.  $\frac{4}{3}x = \frac{5}{6}$

## Classwork:

1.  $2x + 8 = -10$

2.  $4x - 12 = 3x - 3$

3.  $2(2x + 7) - 2x = 20$

4.  $\frac{1}{2}(2x + 10) = 8$

5.  $\frac{x + 4}{3} = 7$

6.  $5x + 6 - 3x + 2 = 12$

7.  $-3x - 2 = -17$

8.  $5x + 10 = 2x - 5$

1.  $\frac{x + 4}{9} = 6$

2.  $2x + 4 + 5x - 8 = 24$

3.  $5x + 2 = x + 6$

4.  $3x + 9 = 10x - 5$

5.  $28 = 10x - 5x - 2$

**6.  $10 + 4x - 3x = 13$**

**7.  $15 - 3x = -6$**

**8.  $\frac{x + 6}{5} = 9$**

**9.  $4x - 2 = 6x + 6$**

**10.  $5x - 2 - 8x = 31$**



Homework Pg 510 10-14  
Show all work

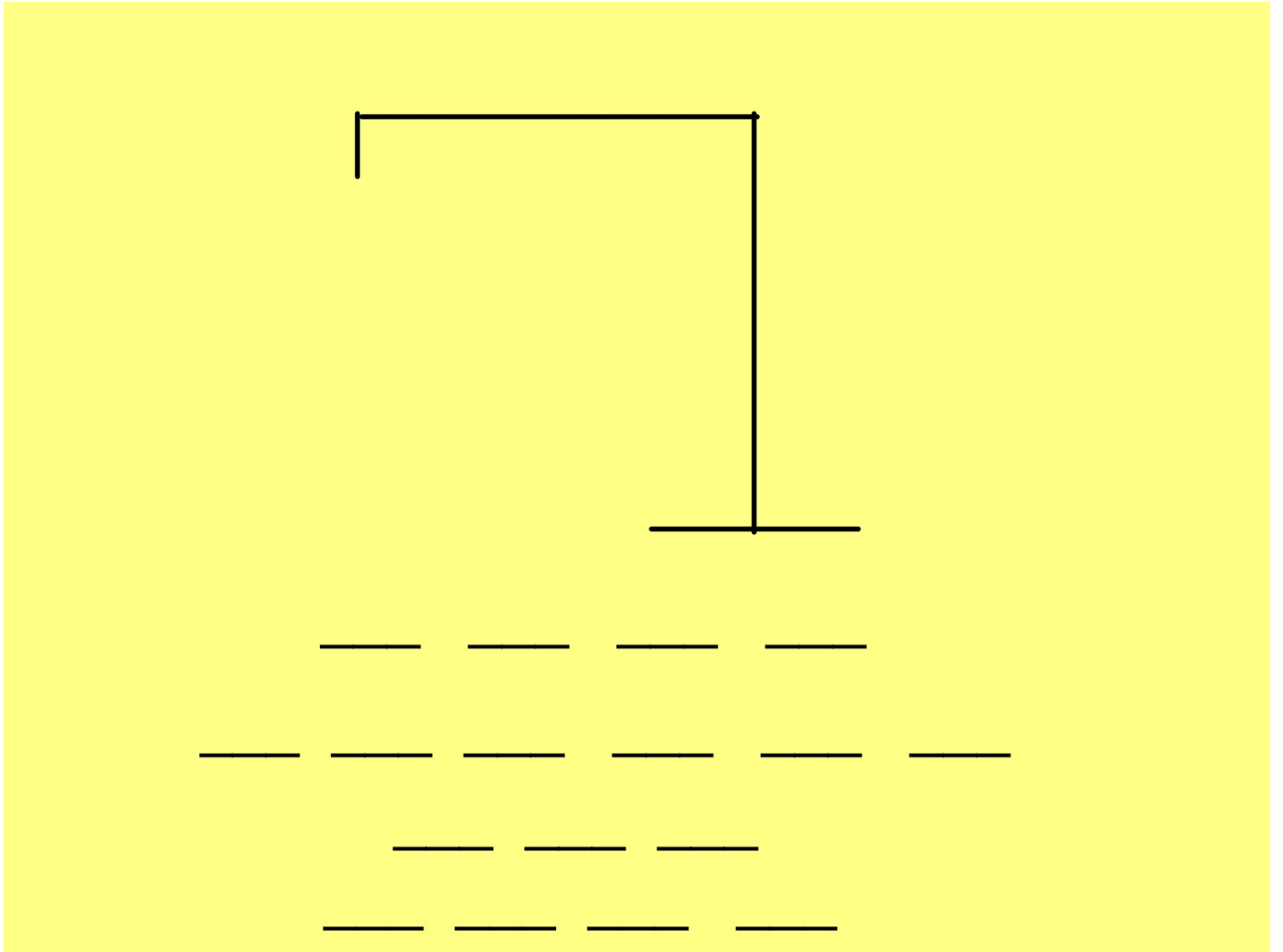
## WARM UP: SOLVE EACH EQUATION

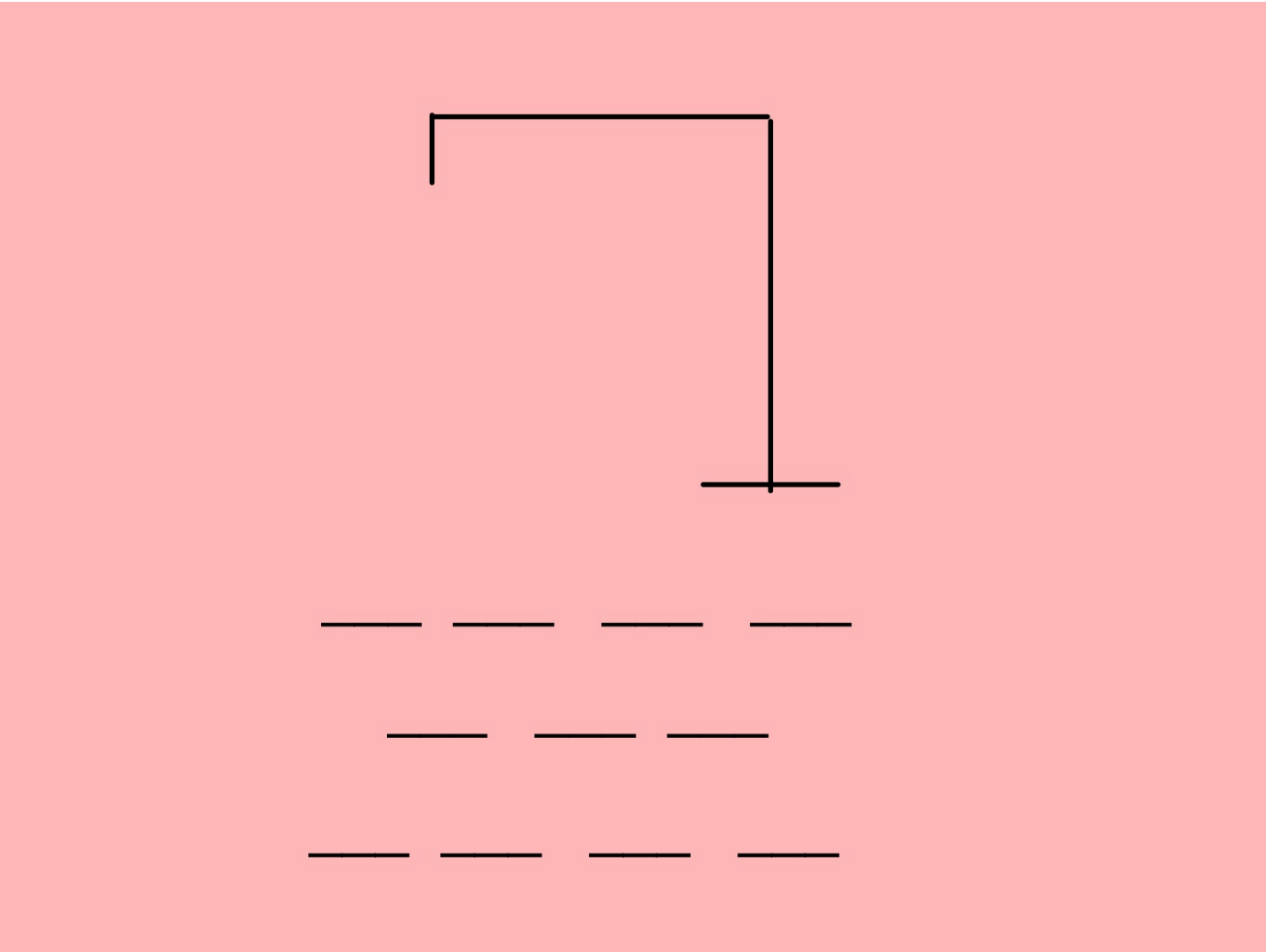
1.  $2(X - 5) = 24$

2.  $3X - 21 = 2X + 4$

3.  $6X + 4 - 8X = -22$

4.  $\frac{X - 7}{6} = 12$





Quiz Today on 10.1, 10.2, and 10.3

**NO TALKING** you have 20 minutes to complete

When you are done, sit quietly

## Hangman Words

1. mean, median, and mode
2. Stem and Leaf

Homework Pg 510 21-26  
Show all work