Name ~~Name~~ Key Date _____ Period _____

System Applications

Solve each problem using a system of equations. Make sure you show all work and write a complete sentence for your answer.

1. Luke has $5 more than Sam. Together they have $73. How much does each have.

$L = S + 5$
$S + L = 73$

$S + S + 5 = 73$
$2S + 5 = 73$
$2S = 68$

Sam $= \$34$
Luke $= \$39$

2. Lyn has twice as much money as Jo. Together they have $63. How much money does each have?

$L = 2J$
$L + J = 63$

$2J + J = 63$
$3J = 63$

Jo $= \$21$
Lyn $= \$42$

3. There are 12 people on the jury. There are 4 more men than women. How many men were there?

$m = w + 4$
$m + w = 12$

$w + 4 + w = 12$
$2w + 4 = 12$
$2w = 8$

$w = 4$
$m = 8$

4. State College has 620 students. There are 20 more women than men. How many women are there?

$m + w = 620$
$m + 20 = w$

$m + m + 20 = 620$
$2m + 20 = 620$
$m = 300$

$w = 320$

5. Lee bicycled 3 km farther than Wing. The sum of the distances they bicycled was 25 km. How far did each bicyclist go?

$L + w = 25$
$w + 3 = L$

$w + 3 + w = 25$
$2w + 3 = 25$
$2w = 22$

$L = 14$
$w = 11$

6. Brenda drove three times as far as Jan. Brenda drove 24 more miles than Jan. How far did Jan drive?

$B = 3J$ $\quad J+24 = 3J$

$J+24 = B$ $\quad 24 = 2J$

$J = 12$

7. Lisa walked 8 km more than Tim. Lisa walked twice as far as Tim. How far did each walk?

$L = T+8$ $\quad 2T = T+8$

$L = 2T$ $\quad T = 8$, $L = 16$

8. The Ravens won twice as many games as they lost. They played 96 games. How many games did they win?

$W+L = 96$ $\quad 2L+L = 96$

$2L = W$ $\quad 3L = 96$

$L = 32$

Win = 64

9. Shelly made 5 more sales calls than Clark. Shelly and Clark made a total of 33 sales calls. How many sales calls did each make?

$S+C = 33$ $\quad C+5+C = 33$

$C+5 = S$ $\quad 2C+5 = 33$

$C = 14$, $S = 19$

10. Skip had eight fewer job interviews than Woody. Together they had 20 interviews. How many interviews did each have?

$W-8 = S$ $\quad W+W-8 = 20$

$W+S = 20$ $\quad 2W-8 = 20$

$W = 14$, $S = 6$

11. The number of grocery items on two grocery lists differs by 7. The total number of items is 33. How many items are on each list?

$x+y = 33$ $\quad y = -x+33$

$x-y = 7$ $\quad x+x-33 = 7$

$2x = 40$ $\quad x = 20$

List 1 = 20, List 2 = 13