solns Below:

**QUIZ 6 CRN10113 MATH 65 SU14 SEC 083**

**1. DETERMINE WHETHER THE ORDERED PAIR IS A SOLUTION OF THE SYSTEM OF EQUATIONS.**

**(1,4); $5x - 2y = -3$**
**$7x - 3y = -5$**

(TRUE)

**SOLVE THE NEXT PROBLEMS USING THE SUBSTITUTION METHOD**

**2.**
**$x + y = 5$**
**$y = x + 1$**

$\}$ (2,3) $\}$ $2+3=5$, $3=2+1$ $\}$ checks

**3.**
**$x = y - 6$**
**$3x + 2y = 2$**

$\}(-2,4)$ $\}$ $x=-2-4$, $3\cdot(-2)+2\cdot(4)=2$ $\}$ checks

**SOLVE THE NEXT PROBLEMS USING THE ELIMINATION METHOD**

**4.**
**$x - y = 2$**
**$x + y = 4$**

$\}$ 3,1 $\}$ $3-1=2$, $3+1=4$ $\}$ checks

**5.**
**$x - y = 3$**
**$2x - 3y = -1$**

$\}$ (10,7) $\}$ $10-7=3$, $2\cdot10-3\cdot7=-1$ $\}$ checks

**SOLVE USING THE SUBSTITUTION OR ELIMINATION METHOD:**

**6. JEROME'S EXPERIMENT REQUIRES HIM TO MIX A 50 % ACID SOLUTION WITH AN 80 % ACID SOLUTION TO CREATE 200 -oz. OF A 68 % ACID SOLUTION. HOW MUCH 50 % SOLUTION (called x) AND HOW MUCH 80 % ACID SOLUTION (called y) SHOULD HE USE? IN OTHER WORDS, SOLVE FOR x AND y.**

(80,120)

checks:

$80+120=200$ ← $x+y=200$

$\}$ checks

$0.5\cdot x + 0.80\cdot y = 136$

40 96

QUIZ 6 PT 2
SOLUTIONS

1. $5x-2y=-3$

$7x-3y=-5$

$(1,4)$

$5-8=-3$ } TRUE
$7-12=-5$ }

2. (A) $x+y=5$

(B) $y=x+1$

keep it real NOW:

(B) INTO (A)

$x+x+1=5$
$2x+1=5$
$2x=4$
$x=2$

(B) sub: $y=2+1$
$y=3$
soln: $(2,3)$

3. $x=y-6$ (A)
$3x+2y=2$ (B)

(A) INTO (B):

$3(y-6)+2y=2$

collect and isolate y on one side:

$5y-18+2y=2$
$5y-18=2$
$5y=20$
$y=4$

$\Rightarrow$ (A): $x=4-6$
$x=-2$

$\Rightarrow$ soln $=(-2,4)$

plug in to check.

Boom:

4. $x-y=2$
$x+y=4$ } ADD

$2x=6$
$x=3$. sub into 2ND: $3+y=4$
$y=1$
SOLN: $(3,1)$

Quiz

5.

(A) $x - y = 3$

(B) $2x - 3y = -1$

MULTIPLY (A) by 2 and SUBTRACT (B): eliminate x,

$$2x - 2y = 6$$
$$-(2x - 3y = -1)$$
$$y = 7$$

$\Rightarrow$ (A): $x - 7 = 3$

$x = 10$

$Soln = (10, 7)$

6.

(A) $x + y = 200$

(B) $(0.50)x + (0.80)y = 136$

$x = 200 - y$ (A)

SUB: INTO (B) $\Rightarrow$

$0.5(200 - y) + 0.8y = 136$

$100 - 0.5y + 0.8y = 136$

$100 + 0.3y = 136$

6 PT. 2 SOLN. (2.0

$0.3y = 36$

$\frac{0.3y}{0.3} = \frac{36}{0.3}$

$y = 120.$

(A): $x = 200 - y$

$x = 200 - 120$

$x = 80.$

completed.