Quiz Review

Determine if the ordered pair is a solution to the system $\begin{cases} 2x - 9y = -41 \\ y = -3x + 2 \end{cases}$

1. (-3,7)
2. (4,2)
3. (1,-1)

Solve by graphing

4. $\begin{cases} 6x + 12y = 6 \\ 2x + 5y = 0 \end{cases}$

Solve by substitution

5. $\begin{cases} 20x - 30y = -50 \\ x + 2y = 1 \end{cases}$
6. $\begin{cases} 4x + 3y = 17 \\ 2y = 8 - 6x \end{cases}$

Solve by Elimination

7. $\begin{cases} -8y + 6x = 36 \\ 6x - y = 15 \end{cases}$
8. $\begin{cases} -14x + 15y = 15 \\ 21x - 20y = -10 \end{cases}$

   21x – 20y = -10
9. Solve $\begin{cases} 3x - 9y = -162 \\ y = 7x - 2 \end{cases}$ using a method of your choice.
10. At a grocery store, a customer pays a total of $11.10 for 1.6 pounds of chicken and 2 pounds of fish. Another customer pays a total of $12.15 for 2.4 pounds of chicken and 1.8 pounds of fish. How much does each cost per pound? How much do 2 pounds of chicken and 2 pounds of fish cost?
11. Gerry visited a farm and saw a total of 87 chickens and pigs. If there were a total of 248 legs between all of these animals, how many animals were chickens and how many were pigs?
12. Megan has a bowl containing $1.95 in pennies and dimes. If she has 3 times as many pennies as she has dimes, how many pennies and how many dimes does she have?

Begin thinking about the different situations that will make each method more efficient. We will be talking more about that after the quiz.

Challenge questions: (we will work on more questions like this after the quiz).

13. **The value of your EFG stock is three times the value of your PQR stock. If the total value of the stock is $4500, how much is invested in each company?**
14. **In your chemistry class you have a bottle of 5% boric acid solution and a bottle of 2% boric acid solution. You need 60 milliliters of a 3% boric acid solution for an experiment. How much of each solution do you need to mix together?**
15. A boat travels 42 miles upstream in 3 hours looking for a lost diver. It then travels downstream 70 miles in 2 hours. How fast would the boat travel if there was no current? How fast is the current?

Ch. 5 Quiz 1 Review

1. $2x - 9y = -41$
   $y = -3x + 2$

   NO

   $2(-3) - 9(7) = -41$
   $-6 - 63 = -41$
   $-69 \neq -41$

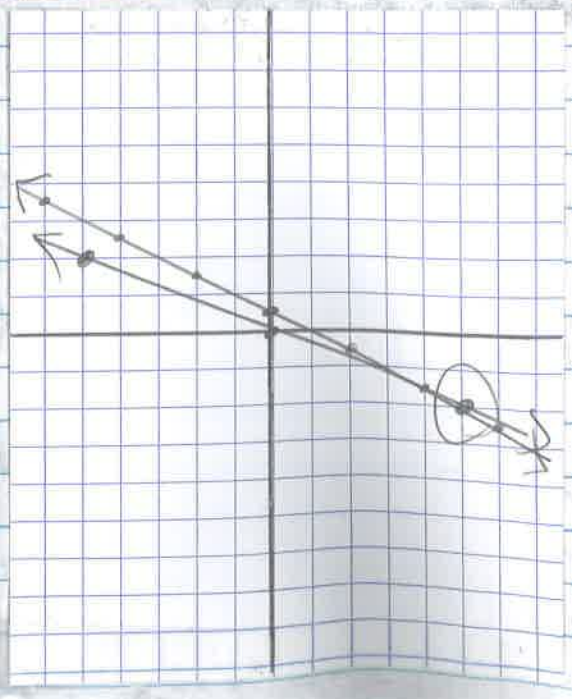
2. $2(4) - 9(2) = -41$
   $8 - 18 = -41$
   $-10 \neq -41$

   NO

3. $2(1) - 9(-1) = -41$
   $2 + 9 = -41$

   NO

4. $6x + 12y = 6 \longrightarrow 12y = -6x + 6$ (1, 0)
   $2x + 5y = 0$ $y = -\frac{1}{2}x + \frac{1}{2}$ (0, 1/2)



$5y = -2x$
$y = -\frac{2}{5}x$

(5, -2)

5. $20x - 30y = -50$
$x + 2y = 1$

$x = -2y + 1$

* remember to substitute into the other equation.

$2(-2y+1) - 30y = -50$
$-40y + 20 - 30y = -50$
$-70y + 20 = -50$
$-70y = -70$
$y = 1$

$x + 2y = 1$
$x + 2(1) = 1$
$x + 2 = 1$
$x = -1$

$(-1, 1)$

6. $4x + 3y = 17$
$2y = 8 - 6x \rightarrow y = 4 - 3x$

$4x + 3(4 - 3x) = 17$
$4x + 12 - 9x = 17$
$-5x + 12 = 17$
$-5x = 5$
$x = -1$

$4(-1) + 3y = 17$
$-4 + 3y = 17$
$3y = 21$
$y = 7$

$(-1, 7)$

7. $-8y+6x=36$
$6x-y=15$
$-(6x-8y=36)$
$7y=-21$
$y=-3$
$6x-(-3)=15$
$6x+3=15$
$6x=12$
$x=2$

$(2,-3)$

8. $(-14x+15y=15)\,3$
$(21x-20y=-10)\,2$

$-42x+45y=45$
$+(42x-40y=-20)$
$5y=25$
$y=5$

$21x-20(5)=-10$
$21x-100=-10$
$21x=90$
$x=\frac{90}{21}$

$x=\frac{30}{7}$

$\left(\frac{30}{7},5\right)$

9. $3x - 9y = -162$
$y = 7x - 2$

$3x - 9(7x-2) = -162$
$3x - 63x + 18 = -162$
$-60x = -180$
$x = 3$

(3, 19)

$y = 7(3) - 2$
$y = 21 - 2$
$= 19$

10. $1.6c + 2f = 11.10$
$2.4c + 1.8f = 12.15$ * work is at the end.

11. $c + p = 87$
$2c + 4p = 248$
$-(c + 2p = 124)$

$-p = -37$

$p = 37$

37 pigs
50 chickens

$c + p = 87$
$c + 37 = 87$
$c = 50$

12. $.01p + .1d = 1.95$
$p = 3d$
$.01(3d) + .1d = 1.95$
$.03d + .1d = 1.95$
$.13d = 1.95$
$d = 15$

$p = 3d$
$p = 3.15$
$p = 45$

She has 15 dimes and 45 pennies.

Challenge Questions
(we will continue working on these types of questions after the quiz)

13. $E = 3P$

$E + P = 4500$

$3P + P = 4500$
$4P = 4500$
$P = 1125$
$E = 3375$

EFGr is valued at $3375

PQR is valued at $1125

14.

5%	2%	3%	
x	$+ y$	$= 60$	$x = 60 - y$

$.05x + .02y = .03(60)$
1.8

$.05(60 - y) + .02y = 1.8$
$3 - .05y + .02y = 1.8$
$-.03y = -1.2$
$y = 40$

$x + y = 60$
$x + 40 = 60$
$x = 20$

you need
40 mL of 2% solution
and
20 mL of 5% solution

distance = rate • time

15. upstream. $b - c = 14$

downstream $+(b + c = 35)$

$2b = 49$

remember: $d = rt$

up $42 = r \cdot 3$

$14 = r$

down. $70 = r \cdot 2$

$35 = r$

boat is 24.5 miles per hour.
current is 10.5 miles per hour

upstream the current slows you down, so you subtract.

downstream the current speeds you up, so you add.

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10. $1.6c + 2f = 11.10 \rightarrow 2f = -1.6c + 11.1$

$2.4c + 1.8f = 12.15 \quad f = -.8c + 5.55$

$2.4c + 1.8(-.8c + 5.55) = 12.15$

$2.4c - 1.44c + 9.99 = 12.15$

$.96c = 2.16$

$c = 2.25$

$f = -.8(2.25) + 5.55$

$-1.8 + 5.55$

$f = 3.75$

2.25 pounds of chicken
3.75 pounds of fish