Test II 150

Place your answers on the blank to the left. Show your work on a separate sheet.
Write your name on the upper right hand corner of this sheet. ☺ Have fun!

___________ 1) Solve,
\[
\begin{align*}
2x - 3y &= -1 \\
3x + y &= 4
\end{align*}
\]

___________ 2) Solve,
\[
\begin{align*}
\frac{1}{2}x + \frac{1}{4}y &= 2 \\
\frac{2}{3}x + \frac{1}{6}y &= 2 \\
x + y - z &= 0
\end{align*}
\]

___________ 3) Solve,
\[
\begin{align*}
2x - y + z &= 9 \\
3x + y - z &= 6
\end{align*}
\]

___________ 4) Solve,
\[
\begin{align*}
3x - 7y &= 8 \\
6x - 14y &= 16
\end{align*}
\]

___________ 5) Solve,
\[
\begin{align*}
x - 18y &= 3 \\
2x - 36y &= 1
\end{align*}
\]

___________ 6) Find the equation of the line that passes through (1,2) and (2,3).

___________ 7) Find the equation of the line that passes through (2,1) and that is perpendicular to \( y = 2x - 18 \).

___________ 8) Find the equation of the line that passes through (1,1) and that is parallel to \( y = 2x - 18 \).

___________ 9) Find the equation of the line that has the same y intercept as \( y = 2x - 18 \) and that has a slope of 1.

___________ 10) Find the equation of the line that has the same x intercept as \( y = 2x - 18 \) and that has a slope of 1.
11) Solve,

\[ 3x - 2y + z = 8 \]
\[ 3x + 2y + z = -8 \]
\[ x + y + z = 4 \]

12) Suppose you invested 1000$ in three investments. The rate of return on the investments was; 4%, 5%, and 6% for the year. The total amount of interest earned was 53.33$. If the amount invested at 4% and 5% combined was twice the amount invested at 6% how much was invested at each rate?

13) When a crew rows with the current, it travels 22 miles in 2 hours. Against the current, the crew rows 10 miles in 2 hours. Find the rate of the boat in still water and the rate of the current.

14) A hawk can fly 200 miles in 10 hours with the wind. Flying against the wind, the hawk covers only one half the distance in 10 hours. Find the rate of the hawk in still air and the rate of the wind?

15) Peanuts sell for 4 $/lb. Almonds sell for 10$/lb. Suppose you need a 20 lb mix of peanuts and almonds that will sell for 6 $/lb. How much of each do you need?

16) At a college production of a play, 400 tickets were sold. The ticket prices were 8$, 10$, and 12$. The total income was 3700$. How many tickets of each type were sold if the combined number of 8$ and 10$ tickets sold was 7 times the number of 12$ tickets sold?