In problems 1-6, solve each system

1. \[4x + 4y = 5\]
   \[2x - 8y = -5\]

2. \[\frac{1}{3} x + \frac{2}{3} y = -\frac{3}{20}\]
   \[\frac{1}{2} x - \frac{1}{4} y = \frac{3}{4}\]

3. \[1.25x - 0.25y = -1.5\]
   \[1.5x + 2.5y = 1\]

4. \[\frac{1}{4} (5x - \frac{2}{3} y) = 3y - 7x\]
   \[\frac{1}{2} x - \frac{1}{4} y = \frac{3}{4}\]

5. \[|x| + |y| = 1\]
   \[y = x\]

6. \[|x| + |y| = 1\]
   \[y = |x|\]
7. Graph the solution set of the system of inequalities:
\[ x + y > 2 \]
\[ 2x - y < -1 \]

8. Graph the region determined by the solution set of the system of inequalities and find the area of the region:
\[ |x| + |y| \leq 1 \]
\[ x \geq 0 \]
\[ y \geq 0 \]

9. Graph the region determined by the solution set of the system of inequalities and find the area of the region:
\[ |x| + |y| \leq 1 \]
\[ x \geq 0 \]
\[ y \geq x \]

In problems 10-14, set up a system of two equations in two unknowns and use the system to answer the given question:

10. A citrus fruit grower purchased 25 orange trees and 28 grapefruit trees for $792.75. The next week, at the same prices, the grower bought 20 orange trees and 30 grapefruit trees for $742.50. Find the cost of an orange tree and the cost of a grapefruit tree.

11. Flying with the wind, a plane flew 1000 miles in 5 hours. Flying against the wind, the plane could fly only 500 miles in the same amount of time. Find the rate of the plane in calm air and the rate of the wind.
12. A motor boat traveling with the current went 54 miles in 3 hours. Against the current, it took 3.6 hour to travel the same distance. Find the rate of the boat in calm water and the rate of the current.

13. The total value of nickels and dimes in a coin bank is $2.50. If the nickels were dimes and dimes were nickels, the total value of the coins would be $3.05. Find the number of dimes and the number of nickels in the bank.

14. A pharmacist has two vitamin-supplement powders. The first powder is 25% vitamin $B_1$ and 15% vitamin $B_2$. The second is 15% vitamin $B_1$ and 20% vitamin $B_2$. How many milligrams of each of the two powders should the pharmacist use to make a mixture that contains 117.5 mg of vitamin $B_1$ and 120 mg of vitamin $B_2$?