Algebra/Trigonometry Section 1.4 Name:_____

Please do all your work on a separate piece of paper. Please show all setup and work!

Solve the equations.

1. $\frac{5x}{4}+\frac{1}{2}=x-\frac{1}{2}$
2. $\frac{1}{x-3}+\frac{1}{x+3}=\frac{10}{x^2-9}$

Solve the equations for x.

3. $4-2(x-2b)=ax+3$

Write an algebraic expression for the verbal description and simplify.

4. The travel time for a plane traveling at a rate of r kilometers per hour for 200 kilometers
5. The amount of water is q quarts of a product that is 35% water
6. The sum of two consecutive natural numbers is 525. Find the numbers.

Solve the percent problem.

7. What is 175% of 360?

Word problem

8. A manufacturing plant purchases a new molding machine for $225,000. The depreciated value y after t years is: $y=225{,}000-20{,}000t,\ 0\le t\le 8$. Find the value after 8 years.
9. You plan to invest $12,000 in two funds paying 4.5% and 5% simple interest. Your goal is to obtain a total annual interest income of $580 from the investments. What is the smallest amount you can invest in the 5% fund in order to meet your objective?
10. The hypotenuse of an isosceles right triangle is 5 centimeters long. How long are its sides?

Solve the quadratic equation for x by factoring.

11. $x^2+10x+25=0$
12. $2x^2=19x+33$
13. $(2x-1)^2=18$

Solve by completing the square.

14. $x^2+6x+2=0$

Use the quadratic formula to solve the equation.

15. $16x^2-40x+5=0$
16. $8t=5+2t^2$
17. $2x^2-2.50x-0.42=0$