Each correct answer is worth 10 points.

_______1: Find the value of $x$, if one-half of $x$ minus one-third of $x$ is five.

_______2: The sum of two numbers is 118, and the difference in the numbers is 26. Find the numbers.

_______3: An aquarium 8 inches wide and 12 inches long is filled to a depth of 10 inches with water. If a cubic block measuring 6 inches on each side is dropped into the aquarium, and it sinks to the bottom, how much does the water level rise?

_______4: If 10% of $A$ is 25% of $B$, $B$ is what percent of $A$?

_______5: A rectangular field that is half as wide as it is long can be enclosed with $x$ yards of fence. Find the area of the field in terms of $x$.

_______6: Sam buys apples at 3 for $1.00 and sells them at 5 for $2.00. How many apples must Sam sell in order to make a profit of $10.00?

_______7: Find the value of $x$ if $\frac{2}{1 + \frac{2}{x}} = 3$.

_______8: If $f(a) = a - 2$ and $F(a, b) = a + b^2$, find the value(s) of $a$ so that $F[a, f(a)] = 14$.

_______9: The lines $7x + 5y = 71$ and $ax + 4y = 1$ intersect when $x = 3$. Find the value of $a$.

_______10: Two guy wires, one 5 feet long and the other 6 feet long, are attached to the top of a 4-foot pole and to the ground at $P$ and $Q$. What is the distance from $P$ to $Q$? Assume that the ground is horizontal and the pole is vertical.