First name: _____ Last name: _____ Student ID: _____

Equations Homework

Basic problems:

1. **Solve each equation.(Hint: Use inverse operation rules to solve.)**

1. $\frac{1}{8}b = \frac{7744}{88}$	2. 2508 = 38a	3. 1835.6 = 35.3a
4. 32.1 = a - 21.8	5. $x + \frac{3}{4} = 14$	6. -7b = -33.6

2. **Solve each of the following equations.**

1. $3(x+5) = 2(-6-x) - 2x$	2. $2(x+1) = 3(2x-4) + 2$
3. $\frac{m-2}{3} + 1 = \frac{2m}{7}$	4. $\frac{2x}{x+3} = \frac{3}{x-10} + 2$
5. $3(2x+5) = \frac{3x}{2} - 4$	6. $\frac{x-2}{3} + 1 = \frac{3x+1}{2} - 4$

Challenge questions

1. Solve for x $\frac{2}{x}+3+\frac{1}{2x}=\frac{4}{3x}+\frac{11}{6}$

2. If twice my age in months is 120, what is then my age in years?

3. For what value of x is the equation $2x + 4x + 6x + \ldots + 98x + 100x = 1700$?

4. The 8th grade took 4/9 of the pizza. The seventh grade took 2/5 of what the eighth grade left of the pizza. The five 6th graders on the team split the remaining pizza equally. What fraction of the pizza did each 6th grader receive?

5. Mary can decorate 24 pencils in one hour. Jerri can decorate 12 pencils in one hour. If they work together, how long will it take to decorate 48 pencils?

6. One house painter charges an initial fee of $25 dollars, plus $15 per hour. A second painter charges $25 per hour. If they both work for same amount of hours, how many hours will the second painter work to make the same amount of money as the first painter?

7. The numbers 6, 14, x, 17, 9, y, 10 have a mean of 13. What is the value of $x+y$?

8. Together Jim and Bob weigh 357 pounds. Together Jim and Larry weigh 393 pounds. The combined weight of all three men is 565 pounds. How much do Bob and Larry weigh together?

9. An escalator moves at a constant rate from one floor up to the next floor. Jack walks up 29 steps while travelling on the escalator between the floors. Jill takes twice as long to travel between the floors and walks up only 11 steps. When it is stopped, how many steps does the escalator have between the two floors?

10. The dimensions of a playground are 40 feet by 30 feet. The walk around it is of uniform width. The playground and walk have a combined area of 2000 square feet. Find the width of the walk in feet.