Accelerated math. Homework 16.

Problems marked with * are more difficult.

1. Evaluate the following expressions (hint: try to use the most efficient way to do it, do some steps using decimals and other using normal fraction):

$$\frac{\left(0.3-\frac{3}{20}\right)\cdot 1\frac{1}{2}}{\left(1.88+2\frac{3}{25}\right)\cdot \frac{1}{80}};$$

(Answer is 4.5)

$$\frac{\left(5\frac{4}{45}-4\frac{1}{6}\right)\div 5\frac{8}{15}}{\left(4\frac{2}{3}+0.75\right)\cdot 3\frac{9}{13}}\cdot 34\frac{2}{7}+\frac{0.3\div 0.01}{70}+\frac{2}{7};$$

(Answer is 1)

2. Instead of M and N put the right expressions to get a true statement.
   a. $(7x-N)-(M+2y)=3x-3y$
   b. $(M+N)-(2a-b)+(a-4b)=5a+7b$
   c. $(a-M)-(N+7b)-(2a+b)=-5a-10b$
   d. $2\cdot(M-b)=14a-2b$
   e. $M(2a+3b)=-6a-9b$
   f. $N\cdot(2x-M)=12x^2-18xy$
   g. $3a\cdot(N+M)=15abc-3ac^2$
3. Simplify the following expressions:
   a. $-(a+b)(a+b)$
   b. $-(x-y)(x-y)$
   c. $(a-b-c)(a-1)$
   d. $(2m-n)(n-3m)$
   e. $(a+1)(a+1)(a+1)$
   f. $(x+1)(x^2-x+1)$
4. Diagonals of a parallelogram intersect at midpoint of the both segments. Prove it.