Rational Equations: Proportion Problems

(Examples of how to set up the problem are included here. The actual process of arriving at the solution to the problem is often left to you.)

Proportion Problems (use means and extremes)

1. If a number is subtracted from the numerator of $\frac{13}{8}$ and added to the denominator of $\frac{13}{8}$, the resulting fraction is equivalent to $\frac{2}{5}$. Find the number.

   Unknown: x = number

   Equation: $\frac{13-x}{8+x}=\frac{2}{5}$

2. In a sample of 24 returned videotapes, it was found that only 3 were rewound as requested. If 872 videos are returned in a day, then how many of them would you expect to find that are **not** rewound?

   Unknowns: N = number of videos rewound
   872 –N = number of videos not rewound

   Equation: $\frac{rewound}{returned}=\frac{3}{24}=\frac{N}{872}$

TRY:

1. If a number is added to the numerator of $\frac{12}{41}$ and twice the number is added to the denominator of $\frac{12}{41}$, the resulting fraction is equivalent to $\frac{1}{3}$. Find the number.

2. The ratio of pickups to cars sold at a dealership is 2 to 3. If the dealership sold 142 more cars than pickups in 1999, then how many of each did it sell?