

Math 206 - Quiz 2

February 9, 2011

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (1.5 points) Write $0.\overline{237}$ as a ratio of two integers. Write your final answer in lowest terms.

LET $F = 0.\overline{237}$

THEN $1000F = 237.\overline{237}$

$$\begin{array}{r} 1000F = 237.\overline{237} \\ - \quad F = 0.\overline{237} \\ \hline 999F = 237 \end{array}$$

$$999F = 237$$

$$F = \frac{237}{999} = \boxed{\frac{79}{333}}$$

2. (2 points) Martha can clean her house in 6 hours. It takes her husband Dan 8 hours. Their son Stu can do it in 3.5 hours (but he doesn't do a very good job!). How long will it take them to clean the house if they work together?

M: $\frac{1 \text{ House}}{6 \text{ Hours}} = \frac{1/6 \text{ House}}{\text{Hour}}$

D: $\frac{1 \text{ House}}{8 \text{ Hours}} = \frac{1/8 \text{ House}}{\text{Hour}}$

S: $\frac{1 \text{ House}}{3.5 \text{ Hours}} = \frac{1/3.5 \text{ House}}{\text{Hour}}$

TOGETHER $\frac{(\frac{1}{6} + \frac{1}{8} + \frac{1}{3.5}) \text{ House}}{\text{Hour}}$

$$\approx \frac{0.57738 \text{ House}}{1 \text{ Hour}} = \frac{1 \text{ House}}{X \text{ Hours}}$$

$$\Rightarrow \boxed{X \approx 1.732 \text{ Hours}}$$

3. (1.5 points) In the lot at the local car dealership, there are 3 times as many red cars as blue cars, and there are 4 times as many blue cars as green cars. Let r , b , and g represent the numbers of red, blue, and green cars, respectively. Find an equation relating r and g .

$$\frac{r}{b} = \frac{3}{1} \quad \text{AND} \quad \frac{b}{g} = \frac{4}{1}$$

$$r = 3b \quad \text{AND} \quad b = 4g$$

$$\boxed{r = 12g}$$