

# Math 206 - Quiz 3

February 1, 2012

Name key

Score \_\_\_\_\_

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

1. (2 points) Solve each of the following. Use two different approaches (e.g. unit rate, scale factor, cross multiply) and state the approach you used.

- (a) Julio paid \$161 for seven gallons of paint. How much would he pay for eight gallons of paint?

$$\begin{array}{r} 23 \\ 7 \overline{)161} \\ \underline{14} \phantom{0} \\ 21 \\ \underline{21} \\ 0 \end{array}$$

JULIO PAID  $\frac{\$161}{7 \text{ GAL}}$  OR  $\$23$  PER GALLON.

UNIT RATE  
APPROACH

EIGHT GALLONS COST  $\$161 + \$23 = \boxed{\$184}$

- (b) Construction workers can build three garages in 8 days. How many days are required to build 18 garages?

18 GARAGES IS  $6 \times 3$  GARAGES.

SCALE FACTOR  
APPROACH

IT WILL TAKE 6 TIMES AS MANY DAYS.

$6 \times 8 \text{ DAYS} = \boxed{48 \text{ DAYS}}$

2. (2 points) Sally and Roger are working together on a class project. Sally could finish the project in 5 hours working by herself. By himself, Roger could finish it in 8 hours. How long will it take them when they work together?

Sally:  $\frac{1 \text{ PROJ}}{5 \text{ HOURS}} = \frac{\frac{1}{5} \text{ PROJ}}{\text{Hour}}$

Roger:  $\frac{1 \text{ PROJ}}{8 \text{ HOURS}} = \frac{\frac{1}{8} \text{ PROJ}}{\text{Hour}}$

TOGETHER  $\frac{(\frac{1}{5} + \frac{1}{8}) \text{ PROJ}}{\text{Hour}} = \frac{\frac{13}{40} \text{ PROJ}}{\text{Hour}}$

$= \frac{1 \text{ PROJ}}{\frac{40}{13} \text{ Hour}}$

IT WILL TAKE  $\frac{40}{13} \approx 3.08$  HOURS

3. (1 point) Find two irrational numbers between  $3.\overline{57}$  and  $3.\overline{58}$ .

$3.\overline{57} = 3.577777\dots$

$3.57808808880\dots$   
 $3.584545545554\dots$

← THESE NEITHER REPEAT NOR TERMINATE

$3.\overline{58} = 3.585858\dots$