

Math 085 - Quiz 11

October 22, 2013

Name key

Score _____

Show all your work to receive full credit. Supply explanations when necessary.
NO CALCULATORS ARE ALLOWED ON THIS QUIZ!

1. (1 point) Divide and simplify: $\frac{-8}{15} \div \frac{4}{5} = -\frac{8}{15} \times \frac{5}{4} = \boxed{-\frac{2}{3}}$

2. (2 points) Solve for x .

(a) $-\frac{7}{20}x = -\frac{21}{10}$

$$x = \frac{21}{7} \times \frac{20}{10} = 6$$

$$\boxed{x = 6}$$

(b) $\frac{4}{15}x = \frac{12}{25}$

$$x = \frac{12}{4} \times \frac{15}{5} = \frac{9}{5}$$

$$\boxed{x = \frac{9}{5}}$$

3. (1 point) Find the least common multiple of 18 and 24.

$$\begin{array}{c} 18 \\ \wedge \\ 2 \ 9 \\ \wedge \\ 3 \ 3 \end{array}$$

$$18 = 2 \cdot 3^2$$

$$\begin{array}{c} 24 \\ \wedge \\ 4 \ 6 \\ \wedge \ \wedge \\ 2 \ 2 \ 2 \ 3 \end{array}$$

$$24 = 2^3 \cdot 3$$

$$\boxed{\text{LCM} = 2^3 \cdot 3^2}$$

$$= 72$$

4. (1 point) Find the least common multiple of 12, 18, and 40.

$$\begin{array}{c} 12 \\ \wedge \\ 3 \ 4 \\ \wedge \\ 2 \ 2 \end{array}$$

$$\begin{array}{c} 18 \\ \wedge \\ 2 \ 9 \\ \wedge \\ 3 \ 3 \end{array}$$

$$\begin{array}{c} 40 \\ \wedge \\ 5 \ 8 \\ \wedge \\ 2 \ 2 \ 2 \end{array}$$

$$12 = 2^2 \cdot 3$$

$$18 = 2 \cdot 3^2$$

$$40 = 2^3 \cdot 5$$

$$\text{LCM} = \boxed{2^3 \cdot 3^2 \cdot 5}$$
$$= 360$$