MTH 60 Worksheet 1 Name_____

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To earn full credit for this worksheet, you must follow the MTH 60 Documentation guidelines located on page 4 through page 6 of this packet. Do your work in pencil.

Keep in mind that your homework is part of your "grade application," just as a cover letter and resume are part of a job application. Impressions count. Neatness and completeness make a lasting impression on the instructor (so does turning your homework in on time).

1. Perform the indicated operation and simplify, if possible. Remember to start with the original expression and line up your equal signs. Show ALL of your work, including any reducing that you do. I have done part a for you demonstrating proper documentation.

a. $\frac{1}{2}+\frac{1}{6}$

$$\begin{aligned}\frac{1}{2}+\frac{1}{6} &= \frac{1}{2}\cdot\frac{3}{3}+\frac{1}{6}\\ &= \frac{3}{6}+\frac{1}{6}\\ &= \frac{4}{6}\\ &= \frac{2\cdot 2}{2\cdot 3}\\ &= \frac{2}{3}\end{aligned}$$

b. $\frac{1}{3}+\frac{2}{15}$

$$\begin{aligned}\frac{1}{3}+\frac{2}{15} &= \frac{1}{3}\cdot\frac{5}{5}+\frac{2}{15}\\ &= \frac{5}{15}+\frac{2}{15}\\ &= \frac{7}{15}\end{aligned}$$

c. $\frac{5}{2}-\frac{5}{6}$

$$\begin{aligned}\frac{5}{2}-\frac{5}{6} &= \frac{5}{2}\cdot\frac{3}{3}-\frac{5}{6}\\ &= \frac{15}{6}-\frac{5}{6}\\ &= \frac{10}{6}\\ &= \frac{2\cdot 5}{2\cdot 3}\\ &= \frac{5}{3}\end{aligned}$$

d. $\frac{5}{4}\div\frac{3}{8}$

$$\begin{aligned}\frac{5}{4}\div\frac{3}{8} &= \frac{5}{4}\cdot\frac{8}{3}\\ &= \frac{5\cdot 2\cdot 4}{4\cdot 3}\\ &= \frac{5\cdot 2}{3}\\ &= \frac{10}{3}\end{aligned}$$

2. List all numbers from the set $\{-2.\overline{4}, \sqrt{22}, 3, \pi, 0, \sqrt{36}, \frac{4}{2}, 0.213\}$ that are

(a) natural numbers____ $\frac{4}{2}, 3, \sqrt{36}$ _____

(b) whole numbers_____ $0, \frac{4}{2}, 3, \sqrt{36}$ _____

(c) integers_____ $0, \frac{4}{2}, 3, \sqrt{36}$ _____

(d) irrational numbers_____ $\sqrt{22}, \pi$ _____

(e) rational numbers____ $-2.\overline{4}$, 0, 0.213, $\frac{4}{2}$, 3, $\sqrt{36}$ _

3. Simplify $3(4a-2b+7)$. Remember to start with the original expression (to the left of the first equal sign) and line up your equal signs (if you have more than one step). Simplifications belong to the right of the equal signs.

$$\begin{aligned} 3(4a-2b+7) &= 3\cdot 4a - 3\cdot b + 3\cdot 7 \\ &= 12a - 6b + 21 \end{aligned}$$

4. Simplify $3(6m+4n)+2(5m+3n)$. Remember to start with the original expression (to the left of the first equal sign and line up your equal signs. Simplifications belong to the right of the equal signs.

$$\begin{aligned} 3(6m+4n)+2(5m+3n) &= 3\cdot 6m + 3\cdot 4n + 2\cdot 5m + 2\cdot 3n \\ &= 18m + 12n + 10m + 6n \\ &= 18m + 10m + 12n + 6n \\ &= 28m + 18n \end{aligned}$$