No: ..... Date: .....

Worksheet 2

Operation on Numbers

1. Find the value of each expression in lowest terms.

(a) $\frac{1}{8} \times \frac{2}{3}$

$= \frac{1 \times 2}{8 \times 3}$

$= \frac{2}{24} = \frac{1}{12}$ ✱ ✓

(b) $\frac{8}{9} \times \frac{3}{4}$

$= \frac{8 \times 3}{9 \times 4}$

$= \frac{24}{36} = \frac{2}{3}$ ✱ ✓

(c) $\frac{5}{9} \times \frac{7}{8}$

$= \frac{5 \times 7}{9 \times 8}$

$= \frac{35}{72}$ ✱ ✓

(d) $\frac{7}{10} \times \frac{2}{21}$

$= \frac{7 \times 2}{10 \times 21}$

$= \frac{14}{210} = \frac{1}{15}$ ✱ ✓

(e) $\frac{3}{4} \times \frac{5}{7}$

$= \frac{3 \times 5}{4 \times 7}$

$= \frac{15}{28}$ ✱ ✓

(f) $1\frac{3}{5} \times 1\frac{10}{11}$

$= \frac{8}{5} \times \frac{21}{11}$ ✓

$= \frac{8 \times 21}{5 \times 11}$

$= \frac{168}{55} = 3\frac{3}{55}$ ✓

(g) $1\frac{1}{2} \times 1\frac{3}{4}$

$= \frac{3}{2} \times \frac{7}{4}$

$= \frac{3 \times 7}{2 \times 4}$

$= \frac{21}{8} = 2\frac{5}{8}$ ✱ ✓

(h) $1\frac{1}{7} \times 9\frac{1}{3}$

$= \frac{8}{7} \times \frac{28}{3}$

$= \frac{8 \times 28}{7 \times 3}$

$= \frac{224}{21} = 10\frac{2}{3}$ ✱ ✓

(i) $7\frac{1}{7} \times 8\frac{2}{5}$

$= \frac{50}{7} \times \frac{42}{5}$

$= \frac{50 \times 42}{7 \times 5}$

$= \frac{2100}{35} = 60$ ✓

(j) $1\frac{8}{9} \times 1\frac{5}{6}$

$= \frac{17}{9} \times \frac{11}{6}$

$= \frac{17 \times 11}{9 \times 6}$

$= \frac{187}{54} = 3\frac{25}{54}$ ✓

(k) $\frac{2}{3} \div \frac{5}{6}$

$= \frac{2}{3} \times \frac{6}{5}$

$= \frac{2 \times 6}{3 \times 5}$

$= \frac{12}{15} = \frac{4}{5}$ ✱ ✓

(l) $\frac{9}{11} \div \frac{7}{22}$

$= \frac{9}{11} \times \frac{22}{7}$

$= \frac{9 \times 22}{11 \times 7}$

$= \frac{198}{77} = 2\frac{4}{7}$ ✓

(m) $\frac{15}{16} \div \frac{5}{8}$

$= \frac{15}{16} \times \frac{8}{5}$

$= \frac{15 \times 8}{16 \times 5}$

$= \frac{120}{80} = 1\frac{1}{2}$ ✱ ✓

(n) $\frac{7}{12} \div \frac{3}{4}$

$= \frac{7}{12} \times \frac{4}{3}$

$= \frac{7 \times 4}{12 \times 3}$

$= \frac{28}{36} = \frac{7}{9}$ ✱ ✓

(o) $\frac{15}{16} \div \frac{5}{8}$

$= \frac{15}{16} \times \frac{8}{5}$

$= \frac{15 \times 8}{16 \times 5}$

$= \frac{120}{80} = 1\frac{1}{2}$ ✱ ✓

(p) $3\frac{3}{7} \div 3\frac{3}{7}$

$= \frac{24}{7} \div \frac{24}{7}$

$= \frac{24}{7} \times \frac{7}{24}$ ✓

$= \frac{24 \times 7}{7 \times 24} = \frac{168}{168}$

$= 1$ ✱ ✓

(q) $2\frac{1}{2} \div 1\frac{1}{2}$

$= \frac{5}{2} \div \frac{3}{2}$

$= \frac{5}{2} \times \frac{2}{3}$

$= \frac{5 \times 2}{2 \times 3} = \frac{10}{6}$

$= 1\frac{2}{3}$ ✱ ✓

(r) $16\frac{2}{3} \div 13\frac{1}{6}$

$= \frac{50}{3} \div \frac{79}{6}$

$= \frac{50}{3} \times \frac{6}{79}$

$= \frac{50 \times 6}{3 \times 79} = \frac{300}{237}$

$= 1\frac{21}{79}$ ✱ ✓

(s) $8\frac{1}{3} \div \frac{5}{6}$

$= \frac{25}{3} \times \frac{6}{5}$

$= \frac{25 \times 6}{3 \times 5}$

$= \frac{150}{15} = 10$ ✱ ✓

(t) $6\frac{4}{5} \div \frac{1}{2}$

$= \frac{34}{5} \times \frac{2}{1}$

$= \frac{34 \times 2}{5 \times 1}$ ✓

$= \frac{68}{5} = 13\frac{3}{5}$ ✱ ✓

No: ..... Date: .....

Solve the problem

(a) $32.3 + 2.3 = 34.6$

$$\begin{array}{r} 32.3 \\ +\ 2.3 \\ \hline 34.6 \end{array}$$

(b) $21.7 + 3.8 = 25.5$

$$\begin{array}{r} {}^{1}21.7 \\ +\ 3.8 \\ \hline 25.5 \end{array}$$

(c) $46.2 + 7.1 = 53.3$

$$\begin{array}{r} {}^{1}46.2 \\ +\ 7.1 \\ \hline 53.3 \end{array}$$

(d) $46.8 - 9.3 = 37.5$

$$\begin{array}{r} {}^{3}\not{4}6.8 \\ -\ 9.3 \\ \hline 37.5 \end{array}$$

(e) $55.8 - 4.3 = 51.5$

$$\begin{array}{r} 55.8 \\ -\ 4.3 \\ \hline 51.5 \end{array}$$

(f) $33.2 - 13.1 = 20.1$

$$\begin{array}{r} 33.2 \\ -\ 13.1 \\ \hline 20.1 \end{array}$$

(g) $1.67 \times 3.2 = 5.344$

$$\begin{array}{r} {}^{2}1.{}^{2}67 \\ \times\ 3.2 \\ \hline 334 \\ 501 \\ \hline 5344 \end{array}$$

(h) $84.78 \times 0.612 = 51.88536$

$$\begin{array}{r} {}^{2}{}^{1}84.{}^{4}78 \\ \times\ 0.612 \\ \hline {}^{1}{}^{2}{}^{1}169\ 56 \\ 8478 \\ {}^{1}50868 \\ \hline 51885\ 36 \end{array}$$

(i) $5.76 \times 0.25 = 1.44$

$$\begin{array}{r} {}^{3}{}^{3}5.{}^{1}76 \\ \times\ 0.25 \\ \hline {}^{1}{}^{1}28\ 80 \\ 1152 \\ \hline 14400 \end{array}$$

(j) $2.303 \div 329 = 0.007$

$$\begin{array}{r} 0.007 \\ 329\overline{)\,2.303} \\ 0 \\ \hline 23 \\ 0 \\ \hline 230 \\ 0 \\ \hline 2303 \end{array}$$

(k) $4 \div 0.002$

$$\begin{array}{r} \\ 0.002\overline{)\,4} \\ \\ 2000 \\ 2\overline{)\,4000} \\ 4 \\ \hline 0 \\ 0 \\ \hline 0 \\ 0 \\ \hline 0 \\ 0 \end{array}$$

(l) $85 \div 0.3$

$$\begin{array}{r} \\ 0.3\overline{)\,85} \\ \\ 283.33 \\ 3\overline{)\,850} \\ 84 \\ \hline 10 \\ 9 \\ \hline 10 \\ 9 \\ \hline 10 \\ 9 \\ \hline 1 \end{array}$$

No: ..... Date: .....

3. (a) Write 8.2×10^5 as an ordinary number

8.2×10^5

$= 820000$

8.2×100000

$= 820000$

(b) Write 0.000376 in standard form.

0.000376

$= 3.76 \times 10^{-4}$ ✓

(c) Work out the value of $(2.3 \times 10^{12}) \div (4.6 \times 10^3)$. Give your answer in standard form.

$(2.3 \times 10^{12}) \div (4.6 \times 10^3)$

$= 2300000000000 \div 4600$

$= 500000000$

$= 5 \times 10^{-8}$ ✗ 10^8

2300000000000 / 4600

0.5×10^9

$= 5 \times 10^{-1} \times 10^9$

$= 10^8$

4. (a) Write 40 000 000 in standard form

$40\,000\,000$

$= 4 \times 10^{-7}$ → 10^7

(b) Write 3×10^{-5} as an ordinary number.

3×10^{-5}

$= 0.00003$ ✓

0.00003

(c) Work out the value of $3 \times 10^{-5} \times 40\,000\,000$. Give your answer in standard form.

$3 \times 10^{-5} \times 40\,000\,000$

$= 0.00003 \times 40\,000\,000$

$= 1200$

$= 1.2 \times 10^{-3}$ ✗ 3 ✓

3

Good try!

5/1/19