

KEY

1a.)

$$\begin{array}{r} 12.\overline{91} \\ 12.\overline{87} \end{array}$$

↑ tenths are key $\boxed{12.91 > 12.87}$
because $9 > 8$. or $91 > 87$ hundredths

b.)

$$\begin{array}{r} 11.\overline{05} \\ 10.\overline{76} \end{array}$$

↑ ones place shows $\boxed{11.05 > 10.76}$
that $1 > 0$.

c.)

$$\begin{array}{r} 0.\overline{30} \\ 0.\overline{24} \end{array}$$

↑ tenths place
shows $3 > 2$ or
 $30 > 24$

$$\boxed{0.3 > 0.24}$$

2a.)

$$\begin{array}{r} 0.62 \\ + 8.06 \\ \hline 8.68 \end{array}$$

} line up decimals / place values

$$\begin{array}{r} 8.68 \\ + 5.00 \text{ (annex zeroes)} \\ \hline 13.68 \end{array}$$

$$\boxed{13.68}$$

2b.)

$$\begin{array}{r} \overset{14}{8} \overset{9}{5} \overset{13}{0} \\ - 7.59 \\ \hline 77.44 \end{array}$$

$$\boxed{77.44}$$

*line up decimals

c.) *order of operations (first operation L → R)

$$\begin{array}{r} \overset{6}{2} \overset{9}{7} \overset{10}{0} \\ - 15.34 \\ \hline 11.66 \end{array}$$

(annex zeroes)

$$\boxed{27 - 15.34 + 9.87}$$

$$\begin{array}{r} 11.66 + 9.87 \\ \hline 21.53 \end{array}$$

2nd

$$\begin{array}{r} 11.66 \\ + 9.87 \\ \hline 21.53 \end{array}$$

$$\boxed{21.53}$$

3a.) note:

line up digits, move decimals to right, multiply

$$\begin{array}{r} \overset{1}{4} \overset{5}{5} \overset{6}{6} \\ * \quad \overset{1}{1} \overset{2}{2} \\ \hline 912 \\ 4560 \\ \hline 5472 \end{array}$$

 $\boxed{3}$ decimals

$$\boxed{5.472 \text{ or } 5.47} \text{ (rounded)}$$

$$\begin{array}{r} \overset{6}{2} \overset{7}{2} \overset{1}{1} \overset{6}{6} \overset{8}{8} \\ * \quad \overset{9}{9} \overset{0}{0} \overset{3}{3} \\ \hline 6504 \\ 00000 \\ + 1951200 \\ \hline 1957704 \end{array}$$

(can switch numbers using Commutative Property) $\boxed{5}$ decimals

$$\boxed{19.57704 \text{ or } 19.58 \text{ (rounded)}}$$

$$3c.) \begin{array}{r} 15.25 \\ * 224 \\ \hline \end{array}$$

2 decimals

$$\begin{array}{r} 6100 \\ 30500 \\ + 305000 \\ \hline 341600 \end{array}$$

3,416

$$\text{dividend} \div \text{divisor} = \text{divisor} \overline{) \text{dividend}}$$

$$4a.) \begin{array}{r} 380 \\ 12 \overline{) 34560} \\ \underline{-36} \downarrow \\ 96 \\ \underline{-96} \downarrow \\ 00 \end{array}$$

* divide to end of original dividend

* once reach remainder of 0 division stops.

380

$$b.) \begin{array}{r} 28 \\ 103 \overline{) 2884} \\ \underline{-206} \\ 824 \\ \underline{-824} \\ 0 \end{array}$$

28

$$c.) \begin{array}{r} 2.25 \\ 24 \overline{) 54.000} \\ \underline{-48} \downarrow \\ 560 \\ \underline{-48} \downarrow \\ 120 \\ \underline{-120} \\ 0 \end{array}$$

* whole numbers have "invisible" decimal after ones places, annex zeroes

2.25

5a.)

estimate:

$$4 \overline{) 18.0} \begin{array}{r} 4.5 \\ -16 \\ \hline 20 \end{array}$$

or

$$4 \overline{) 20} \begin{array}{r} 5 \\ -20 \\ \hline 0 \end{array}$$

quotient: $3.8 \overline{) 18.05}$

$$\begin{array}{r} 4.75 \\ 38 \overline{) 180.50} \\ -152 \\ \hline 285 \\ -266 \\ \hline 190 \\ -190 \\ \hline 0 \end{array}$$

* move decimal
in both because
divisor (3.8) must be
a whole number

* slide decimal up ↑

* annex zeroes if
need

$$E = 4.5 \text{ or } 5$$

$$Q = 4.75$$

b.) estimate: $0.03 \overline{) 0.07}$

$$\Rightarrow 3 \overline{) 7.000} \begin{array}{r} 2.333 \\ -6 \\ \hline 10 \\ -9 \\ \hline 10 \\ -9 \\ \hline 10 \\ -9 \\ \hline 10 \\ -9 \end{array}$$

quotient: $0.026 \overline{) 0.0676}$

$$\begin{array}{r} 2.6 \\ 26 \overline{) 67.6} \\ -52 \\ \hline 156 \\ -156 \\ \hline 0 \end{array}$$

rewritten
below

* stop!
keeps
repeating

$$E \approx 2.3$$

$$Q = 2.6$$

5c.)

$$47 \overline{) 543.75}$$

* no need to move decimal because divisor is whole number already

estimate:

$$\begin{array}{r} 10 \\ 50 \overline{) 500} \\ - 50 \downarrow \\ \hline 00 \end{array}$$

quotient:

$$\begin{array}{r} 11.569148 \\ 47 \overline{) 543.750000} \\ - 47 \downarrow \\ \hline 73 \downarrow \\ - 47 \downarrow \\ \hline 267 \downarrow \\ - 235 \downarrow \\ \hline 325 \downarrow \\ - 282 \downarrow \\ \hline 430 \downarrow \\ - 423 \downarrow \\ \hline 70 \downarrow \\ - 47 \downarrow \\ \hline 230 \downarrow \\ - 188 \downarrow \\ \hline 420 \downarrow \\ - 376 \downarrow \\ \hline \end{array}$$

* can continue or round to hundredths place

* if decimal goes on for 4-5 decimals with no pattern it is an unterminating decimal - round it off!

$$E = 10$$

$$Q = 11.57$$