6.21) De menor a mayor:

$$\boxed{0.907 < 0.9089 < 0.97 < 0.9709 < 0.979}$$

6.22) (a) $8.97 + 0.254$

$$\begin{array}{r} 8.970 \\ +\,0.254 \\ \hline \boxed{9.224} \end{array}$$

(b) $0.27 - 1.006 = -(1.006 - 0.27)$

$$\begin{array}{r} 1.006 \\ -\,0.270 \\ \hline 0.736 \end{array} \qquad \boxed{-0.736}$$

(c) $0.902 \cdot 10000 = 0.902 \times 10^4 = \boxed{9020}$

(d) $25.5 \div 0.05 = 255 \times 10^{-1} \div 5 \times 10^{-2}$

$$= 255 \times \frac{1}{10} \times \frac{1}{5} \times 100$$

$$= \boxed{510}$$

(e) $0.025 \cdot 0.042 = 25 \times 10^{-3} \times 42 \times 10^{-3}$

$$= 25 \times 42 \times \frac{1}{10^3} \times \frac{1}{10^3} = 1050 \times 10^{-6}$$

$$= \boxed{0.001050}$$

(f) $(0.11)^3 = \left(\frac{11}{100}\right)^3 = \frac{1331}{10^6} = \boxed{0.001331}$

6.23) $100 \times 33.67 \times 3.367 \times 1000 = (a)^2$, con $a > 0$.

$$3367 \times 3367 = (3367)^2$$

$$\boxed{3367}$$

6.24) $\frac{6}{.3} + \frac{.3}{.06} = \frac{6}{3/10} + \frac{3/10}{6/100} = \frac{6 \cdot 10}{3} + \frac{3 \cdot 100}{6 \cdot 10}$

$$= 20 + 5 = \boxed{25}$$

6.25) $3.5 - \frac{1}{3.5} = \frac{35}{10} - \frac{10}{35} = \frac{245}{70} - \frac{20}{70} = \frac{225}{70}$

$$= \boxed{\frac{45}{14}}$$

6.26) $\frac{(.2)^3}{(.02)^2} = \frac{(1/5)^3}{(1/50)^2} = \frac{1^3/5^3}{1^2/50^2} = \frac{50^2}{5^3} = \frac{5^2 \cdot 2^2 \cdot \cancel{5^2}}{5^{\cancel{3}}}$

$$= 5^1 \cdot 2^2 = \boxed{20}$$

6.27) 10.68494

a) 10.68 b) 11

$$11 - 10.68 = 0.32 = \frac{32}{100} = \boxed{\frac{8}{25}}$$

6.28)

$$2.5\,¢ \times a = 2000\,¢$$

$$\frac{5}{2}\,¢ \times a = 2000\,¢$$

$$a = \frac{4000}{5} = \boxed{800}$$

6.29)

(a) $\frac{11}{8} = \frac{11}{2^3} = \frac{11\cdot 5^3}{2^3\cdot 5^3} = \frac{1375}{10^3} = \boxed{1.375}$

(b) $\frac{10}{7} = 10\cdot\frac{1}{7} = 10\left(0.\overline{142857}\right)$

$= \boxed{1.\overline{428571}}$

(c) $\frac{7}{15} = \boxed{0.4\overline{6}}$

$$\begin{array}{r} 0.4\overline{6} \\ 15\,\overline{)\,7.0} \\ 60 \\ \hline 100 \\ 90 \\ \hline 100 \end{array}$$

(d) $\frac{39}{20} = \frac{39}{5^1\cdot 2^2} = \frac{39\cdot 5}{5^2\cdot 2^2} = \frac{195}{100}$

$= \boxed{1.95}$

(e) $\frac{25}{33} = \boxed{0.\overline{75}}$

$$\begin{array}{r} 0.\overline{75} \\ 33\,\overline{)\,25.0} \\ 231 \\ \hline 190 \\ 165 \\ \hline 250 \end{array}$$

(f) $\frac{4}{21}$

$$\begin{array}{r} \boxed{0.\overline{190476}} \\ 21\,\overline{)\,4.0} \\ 21 \\ \hline 190 \\ 189 \\ \hline 100 \\ 84 \\ \hline 160 \\ 147 \\ \hline 130 \\ 126 \\ \hline 40 \end{array}$$

6.30) $\frac{4}{37} = 0.\overline{108}$

$$\begin{array}{r} 0.\overline{108} \\ 37\,\overline{)\,4.0} \\ 37 \\ \hline 300 \\ 296 \\ \hline 40 \end{array}$$

$100 \div 3$ tiene residuo 1. Por lo tanto el dígito será $\boxed{1.}$

6.31)

(a) $0.\overline{6}$

$$\begin{aligned} 10x &= 6.\overline{6} \\ -x &= 0.\overline{6} \\ \hline 9x &= 6 \\ x &= \boxed{\tfrac{2}{3}} \end{aligned}$$

(b) $0.\overline{97}$

$$\begin{aligned} 100x &= 97.\overline{97} \\ -x &= 0.\overline{97} \\ \hline 99x &= 97 \\ x &= \boxed{\tfrac{97}{99}} \end{aligned}$$

(c) $0.0\overline{8}$

$$\begin{aligned} 100x &= 8.\overline{8} \\ -10x &= 0.\overline{8} \\ \hline 90x &= 8 \\ x &= \frac{8}{90} = \boxed{\tfrac{4}{45}} \end{aligned}$$

(d) $0.\overline{36}$

$$\begin{aligned} 100x &= 36.\overline{36} \\ -x &= 0.\overline{36} \\ \hline 99x &= 36 \\ x &= \frac{36}{99} = \boxed{\tfrac{4}{11}} \end{aligned}$$

(e) $0.3\overline{21}$

$$\begin{aligned} 1000x &= 321.\overline{21} \\ -10x &= 3.\overline{21} \\ \hline 990x &= 318 \end{aligned}$$

$$x = \frac{318}{990} = \frac{106}{330} = \boxed{\tfrac{53}{165}}$$

(f) $0.45\overline{9}$

$$1000x = 459.\overline{9}$$
$$-100x = 45.\overline{9}$$
$$900x = 423$$
$$x = \frac{423}{900} = \frac{47}{100}$$

$$\begin{array}{r} 47 \\ 9\overline{)423} \\ 36 \\ \hline 63 \end{array}$$