1.6.1)

(a) $7^3 = 49 \times 7 = 343$

(b) $0 \times 0 \times \cdots \times 0 = 0$

(c) $a^0 = 1$ si $a \neq 0$

(d) $(-10)^5 = (-1)^5 \times (10)^5$

$= (-1) \times (100000)$

$= -100000$

(e) $5^{-3} = \frac{1}{5^3} = \frac{1}{125}$

(f) $\left(-\frac{1}{3}\right)^{-4} = (-1)^{-4} \times \left(\frac{1}{3}\right)^{-4}$

$= 1 \times (3)^4 = 81$

1.6.2)

(a) $2^5 \times 2^9 = 2^{14}$ $\quad x = 14$

(b) $\frac{5^9}{5^4} = 5^5$ $\quad x = 5$

(c) $(4^3)^7 = 4^{21}$ $\quad x = 21$

(d) $4 = 2^2$ $\quad \frac{1}{4} = \frac{1}{2^2} = 2^{-2}$ $\quad x = -2$

(e) $9 = 3^2$ $\quad 27 = 3^3$

$$\frac{9^2 \times 3}{27^2} = \frac{3^4 \times 3}{3^6} = \frac{1}{3} = 3^{-1} \quad x = -1$$

(f) $25 = 5^2$

$25^3 = (5^2)^3 = 5^6$ $\quad 5^3 = \frac{5^6}{5^x}$ $\quad x = 3$

$125 = 5^3$

1.6.3)

$(3^a \times 8^2)^5 = 3^{5a} \times 8^{10}$ $\quad a = 3$

$= 3^{15} \times 8^6$ $\quad b = 10$

1.6.4)

$(-3)^5$ y -3^5.

$(-3)\times(-3)\times(-3)\times(-3)\times(-3) = -243$ Sí

$-3^5 = -(3^5) = -243$

Multiplicar un número par de números negativos da positivo, de resto negativo.

1.6.5)

n es par

1.6.6)

(a) $32 \times 25 \times 2^{-2} \times \left(\frac{5}{2}\right)^{-3}$

$2^5 \times 5^2 \times \frac{1}{2^2} \times \frac{2^3}{5^3} = 2^6 \times \frac{1}{5} = \frac{64}{5}$

(b) $\frac{(-2^4 \times 3^3)^3 \times 8 \times 27}{(2^3 \times 3^3)^4} = \frac{(-1)(2^{12}) \times (2^4) \times 2^3 \times 3^3}{2^{12} \times 3^{12}}$

$= -8$

(c) $\frac{(-40)^7}{2^{30} \times 25^3} = \frac{((-1)\times(2^2)\times(5)\times(2))^7}{2^{30} \times (5^2)^3} = \frac{-1 \times 2^{21} \times 5^7}{2^{30} \times 5^6} = -\frac{5}{2^9}$

$= -\frac{5}{512}$

1.6.7) $8^x = (2^3)^x = 2^{3x} = 2^1$

$x = \frac{1}{3}$