1)

Fill in the correct exponent.

(a) $(9^2)^7 = 9^{\square}$

(b) $3^2 \times 3^4 = 3^{\square}$

(c) $((-5)^3)^5 = (-5)^{\square}$

(d) $\left(\frac{4}{3}\right)^2 \times \left(\frac{4}{3}\right)^6 = \left(\frac{4}{3}\right)^{\square}$

(e) $9^1 \times 9^4 \times 9^3 = 9^{\square}$

(f) $\left(\left(\frac{7}{2}\right)^3\right)^4 = \left(\frac{7}{2}\right)^{\square}$

(g) $(-18)^3 \times (-18)^5 \times (-18)^3 = (-18)^{\square}$

(h) $\left(\left(\frac{-1}{3}\right)^4\right)^2 = \left(\frac{-1}{3}\right)^{\square}$

(i) $(3^7 \times 3^6)^2 = 3^{\square}$

(j) $\left[\left(\frac{-15}{7}\right)^2 \times \left(\frac{-15}{7}\right)^5\right]^2 = \left(\frac{-15}{7}\right)^{\square}$

2)

Evaluate the following.

(a) $5^0 = \square$

(b) $\frac{4^5}{4^2} = \square$

(c) $\frac{(-6)^7}{(-6)^2} = \square$

(d) $\left(\frac{3}{2}\right)^0 = \square$

(e) $(-1)^1 = \square$

(f) $(0)^1 = \square$

(g) $\frac{2^3 \times 2^4}{2^5} = \square$

(h) $\frac{1^0 \times 0^1 \times (-1)^1}{\left((-1)^3\right)^0} = \square$

(i) $\frac{\left(7^4\right)^2 \times \left(7^2\right)^3}{7^2} = \square$

(j) $\frac{(-13)^3 \times (-13)^5}{\left[(-13)^2\right]^2} = \square$

3)

Fill in the boxes with correct answers. Express each answer in exponential notation.

(a) $\dfrac{9^3 \times 3^2}{(27)^2}$

$= \dfrac{9^3 \times 3^2}{(9 \times 3)^2}$

$= \dfrac{9^3 \times \cancel{3^2}}{9^2 \times \cancel{3^2}}$

$= 9^{3-2}$

$= 9$

$= 3^2$

3^2

(b) $\dfrac{5^2 \times 2^5}{(10)^2}$

(c) $\dfrac{2^5 \times 8^5 \times (16)^6 \times 8^2}{2^{25}}$

(d) $\dfrac{\left[(15)^4 \div 3^2\right] \div 3^2}{5^2}$

4)

Simplify the following and express it using exponential notation.

(a) $[(-3^2)^3 \div (3^2)^2] \times [(3^0)^2 \div (3^2)^1]$

(b) $[(-5^2) \times (-4)^2]^3 \div [(2^2 \times 5^2) \times (1^0 + 0^1 + 1^1)^2]$

(c) $\left[2^6 \div 4^2\right] \div \left[\frac{(-2)^3}{(-8)^2} \div \left\{-(8)^0\right\}\right]$