CHAPTER 4

EXPONENTS

More Questions for Practice

1. Write each of the following in the exponent form:

(*a*) $3 \times 3 \times 3 \times 3$ (*b*) $7 \times 7 \times 7$ (*c*) $(-1) \times (-1)$

(*d*) $\frac{1}{7} \times \frac{1}{7} \times \frac{1}{7} \times \frac{1}{7} \times \frac{1}{7}$ (*e*) 5 (*f*) -11

(*g*) $2.05 \times 2.05 \times 2.05$

2. Write each of the following in the form of repeated multiplication:

(*a*) 7^5 (*b*) $(-2)^3$ (*c*) 3^6 (*d*) $(11)^2$

(*e*) $(-4)^1$ (*f*) $\left(\frac{3}{7}\right)^3$

3. Find the value of each of the following:

(*a*) 3^4 (*b*) $(-2)^5$ (*c*) $(-1)^6$ (*d*) 9^0

(*e*) $(-1)^4$ (*f*) $\left(\frac{3}{5}\right)^3$

4. Simplify and express the result in exponential form:

(*a*) $2^4 \times 2^5$ (*b*) $(-7)^2 \times (-7)^3$ (*c*) $(1.1)^2 \times (1.1)^1$ (*d*) $2^0 \times 2^5$

(*e*) $(-2)^2 \times (-2)^0$ (*f*) $(8)^2 \times (8)^3$

5. Simplify and express the result in exponential form:

(*a*) $7^5 \div 7^2$ (*b*) $9^3 \div 9^0$ (*c*) $8^5 \div 8^1$ (*d*) $(2.1)^9 \div (2.1)^7$

6. Simplify and express the result in exponential form:

(*a*) $(2^3)^8$ (*b*) $[(-2)^7]^3$ (*c*) $(9^3)^4$ (*d*) $(7^5)^0$

7. Simplify:

(*a*) $(9^2)^2 \div 3^8$ (*b*) $(2^5)^3 \div (-2)^{15}$ (*c*) $10^{11} \div (2^{10} \times 5^{10})$

8. Simplify:

(*a*) $[p^3q^8 \div p^2q^4] \times p^0q^1$ (*b*) $\left[\left(\frac{2x^4}{y^2}\right)^5 \times \left(\frac{3x^2}{y^3}\right)^2\right] \div \left(\frac{6y^5}{x^3}\right)^2$

9. Simplify:

(*a*) $[(3^3)^2 \times 3^4] \div 3^5$ (*b*) $4^3 \times 2a^2 \times 7a^4$

10. Simplify:

(*a*) $18a^5b^7c^2 \div (-2a^2bc^2)^3$

(*b*) $\dfrac{t^4 \times 4^2 \times 16}{t^2 \times 8^3}$

(*c*) $\dfrac{4^5 \times 3^5 \times 5}{3^2 \times 5^3}$

(*d*) $\dfrac{\left(3x^2y^3\right)^5}{\left(4xy^2\right)^2\left(-xy^3\right)}$

ANSWERS

1. (*a*) 3^4 (*b*) 7^3 (*c*) $(-1)^2$ (*d*) $\left(\frac{1}{7}\right)^5$
(*e*) 5^1 (*f*) $(-11)^1$ (*g*) $(2.05)^3$

2. (*a*) $7 \times 7 \times 7 \times 7 \times 7$ (*b*) $(-2) \times (-2) \times (-2)$ (*c*) $3 \times 3 \times 3 \times 3 \times 3 \times 3$ (*d*) 11×11
(*e*) -4 (*f*) $\frac{3}{7} \times \frac{3}{7} \times \frac{3}{7}$

3. (*a*) 81 (*b*) -32 (*c*) 1 (*d*) 1
(*e*) 1 (*f*) $\frac{27}{125}$

4. (*a*) 2^9 (*b*) $(-7)^5$ (*c*) $(1.1)^3$ (*d*) 2^5
(*e*) $(-2)^2$ (*f*) 8^5

5. (*a*) 7^3 (*b*) 9^3 (*c*) 8^4 (*d*) $(2.1)^2$

6. (*a*) 2^{24} (*b*) $(-2)^{21}$ (*c*) 9^{12} (*d*) 7^0

7. (*a*) 1 (*b*) -1 (*c*) 10

8. (*a*) pq^3 (*b*) $8\frac{x^{30}}{y^{26}}$

9. (*a*) 243 (*b*) $896a^6$

10. (*a*) $\dfrac{-9b^4}{4ac^4}$ (*b*) $\dfrac{t^2}{2}$ (*c*) $\dfrac{4^5 \times 3^3}{5^2}$ (*d*) $\dfrac{-243}{16}x^7y^8$.