

13.3 MULTIPLICATION WITH EXPONENTS

A. Write each first in factored form and then in exponential form.

1. $8^4 \times 8^2$

2. $7^3 \times 7^5$

3. $15^2 \times 15^3$

4. $9^3 \times 9^3$

5. $18^5 \times 18^0$

6. $(\frac{3}{4})^2 \times (\frac{3}{4})^3$

7. $(-9)^2 \times (-9)^4$

8. $(-3)^1 \times (-3)^4$

9. $(+3)^1 \times (-3)^3$

10. $(7)^{-5} \times (7)^{-1}$

11. $(8^0) \times (8)^0$

12. $3^{-3} \times 3^{-5}$

13. $5^2 \cdot 5^5 \cdot 5^3$

14. $8^1 \cdot 8^1 \cdot 8^2$

15. $6^3 \cdot 6^4 \cdot 6^0$

16. $2^1 \cdot 2^2 \cdot 2^3$

17. $8^6 \cdot 6^8$

18. $6^{-6} \cdot 6^{+6}$

B. Calculate each of the following and leave your answers in exponential form.

1. $2^3 \times 2^4$

2. $5^2 \times 5^7$

3. $5^4 \times 5^4$

4. $8^3 \times 8^7$

5. $9^3 \times 9^9$

6. $8^4 \times 8^6$

7. $8^3 \times 8^5$

8. $(-3)^5 \times (-3)^6$

9. $(-5)^7 \times (-5)^8$

10. $(\frac{1}{2})^2 \cdot (\frac{1}{2})^8$

11. $19^{-3} \times 19^{-6}$

12. $20^5 \times 20^{-5}$

13. $2^4 \times 2^3 \times 2^5$

14. $5^3 \times 5^3 \times 5^7$

15. $8^2 \times 8^3 \times 8^7$

16. $3^4 \times 5^7$

17. $15^0 \cdot 15^6 \cdot 15^4$

18. $(-5)^7 \cdot (-5)^6 \cdot (-5)^3$

19. $7^{-2} \cdot 7^{-3} \cdot 7^{-4}$

20. $(\frac{1}{4})^5 \cdot (\frac{1}{4})^6 \cdot (\frac{1}{4})^7$

21. $8^5 \cdot 7^5 \cdot 6^5$

22. $3^2 \times 3^4 \times 3^{-8}$

23. $5^{-7} \cdot 5^{-9} \cdot 5^{-8}$

24. $(8^3)(8^5)(8^{-9})$

CANADIAN MATHEMATICS 8

C. Calculate each of the following and leave your answer in exponential form.

1. $2^{10} \times 2^4$

2. $6^3 \times 6^3$

3. $7^5 \times 7^{-2}$

4. $(-2)^4 \times (-2)^6$

5. $5^{-3} \times 5^5$

6. $(-2)^4 \times (-2)^{-7}$

7. $(\frac{2}{3})^5 \times (\frac{2}{3})^2$

8. $(-8)^5 \cdot (-8)^{-8}$

9. $3^8 \times 3^{-2}$

10. $7^5 \times 7^{-5}$

11. $5^2 \cdot 5^{-3} \cdot 5^{-4}$

12. $x^2 x^7 x^8$

13. $7^6 7^4 7^3$

14. $y^7 y^3 y^5 y^{-4}$

15. $2^{-1} \times 2^{-2}$

16. $3^4 \cdot 3^{-3} \cdot 3^2 \cdot 3^5$

17. $8^3 7^3 8^3 7^5$

18. $y^{2x} y^{6x}$

19. $(3^4)^3$

20. $x^3 y^3 x^4 y^1$

21. $49^x \cdot 49^x$

22. $3^2 4^2 3^5 4^7$

23. $5^3 4^3 5^5 4^7$

24. $y^{100} y^{-53} y^{-86}$

25. $42^5 42^{-7} 42^2$

26. $(2x)^{12} (2x)^{14}$

27. $(3^4)^2 \cdot (3^4)^{-3}$